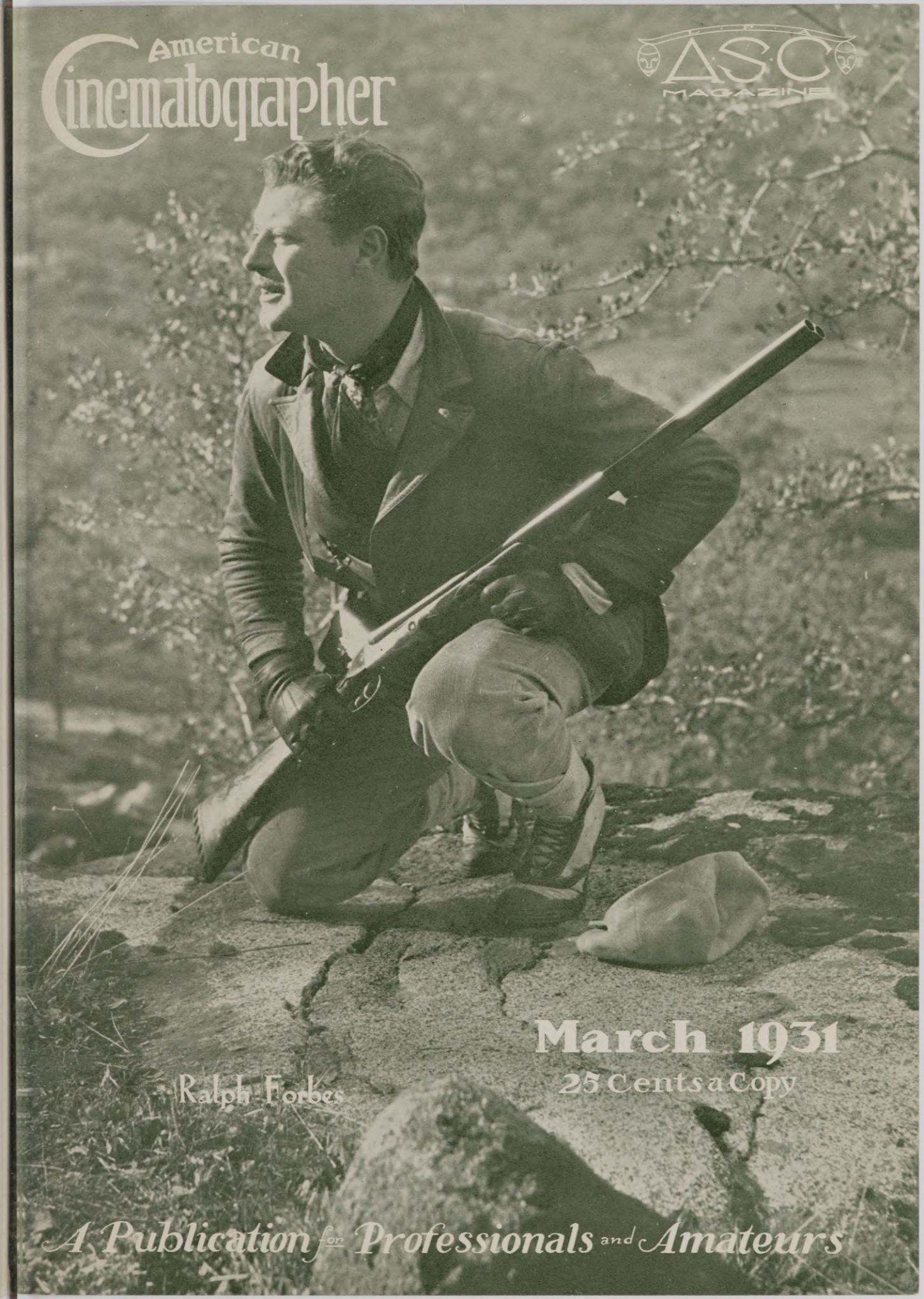
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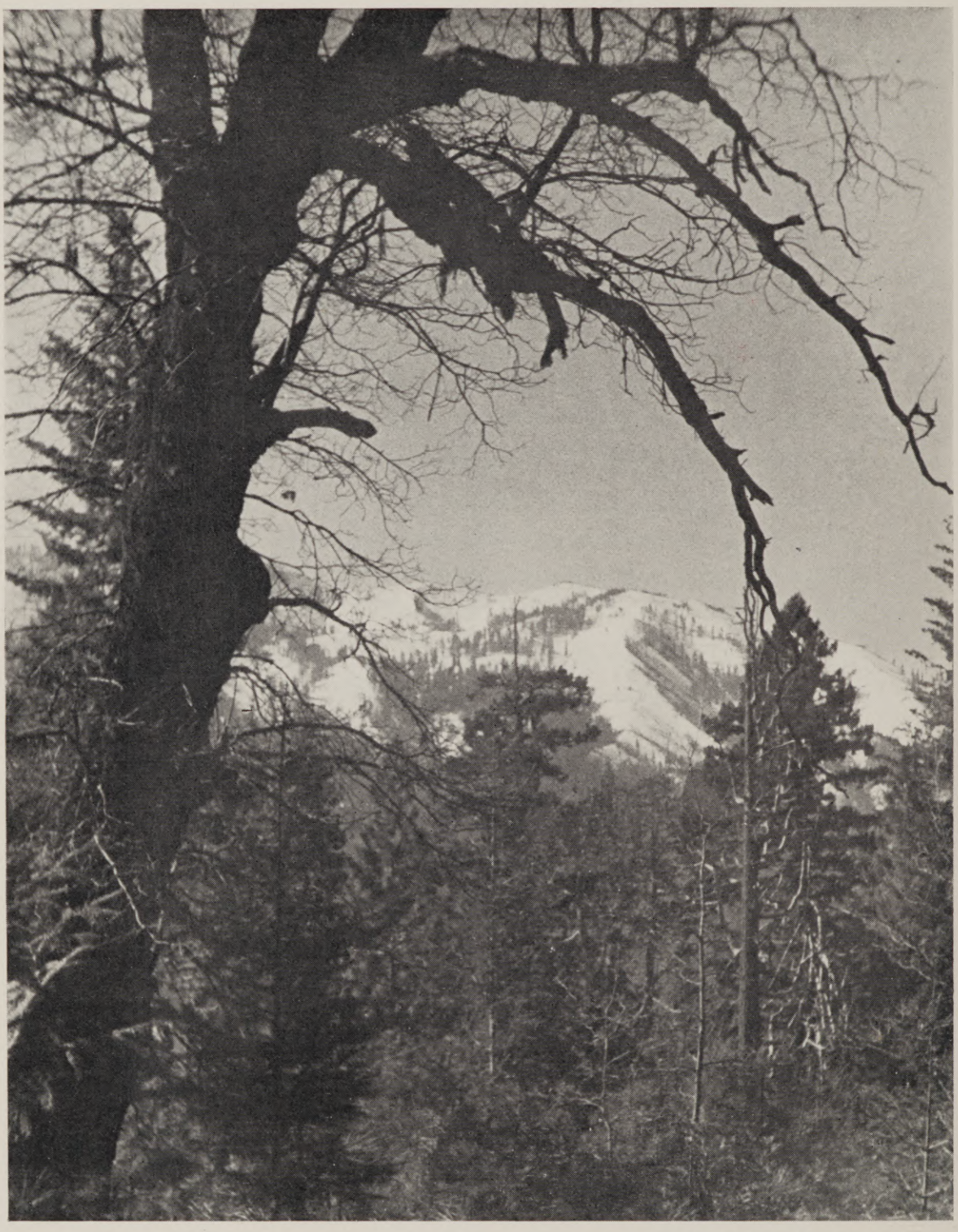


Photo by Gilbert Warrenton, A. S. C.

Eastman Super Sensitive Panchromatic Type Two Motion Picture Film

by **EMERY HUSE** and **GORDON A. CHAMBERS**
West Coast Division—Motion Picture Film Department, Eastman Kodak Company

ON FEBRUARY 5, 1931, the Eastman Kodak Company announced to the motion picture trade in Hollywood, California, their new Super Sensitive Panchromatic Type Two Motion Picture Negative film. Inasmuch as this film exhibits characteristics not hitherto shown in motion picture negative emulsions, it was considered advisable to present some data pertaining to those characteristics. This article is not presented as a complete technical treatise of the characteristics of the Super Sensitive film, its aim being to call attention briefly and simply to the differences this Super Sensitive film exhibits over the present type of panchromatic films.

As the name, Super Sensitive, implies, this emulsion is extremely fast but because of its name this new film must in no way be confused with a hypersensitized film. In the past when an emulsion of extreme speed was desired, either for color photography, filter shots, or trick work, it was customary to especially treat the film with some type of sensitizing bath. This bath caused a general increase in the emulsion speed and particularly increased the red light speed. However, the hypersensitized film had certain disadvantages such as its cost, its lack of keeping qualities, and its propensity to produce fog. With the Super Sensitive Type Two these disadvantages are entirely overcome. The increased speed of the Super Sensitive film has been accomplished during the course of the emulsion manufacture. It is sufficient to say, therefore, that the Super Sensitive film is not a hypersensitized film. Furthermore, the Super Sensitive film exhibits the same keeping qualities and shows identical physical characteristics as those shown by the present panchromatic films.

A complete study of any type of film emulsion is best accomplished by making both sensitometric and practical camera tests. This article will not deal in any detail with camera tests but will consider in some detail the sensitometric characteristics of the Super Sensitive emulsion as compared with the present type of panchromatic film. The point of major importance in the consideration of the Super Sensitive film pertains to its greatly increased speed. The data obtained sensitometrically can be and have been checked by camera exposures.

Sensitometry involves a study of known values of exposure as related to the amount of silver (density) which these exposures produce upon the film after development. The standard sensitometric curve is therefore one in which is shown the relationship between exposure (expressed logarithmically) and the densities produced. It is from curves of this type that the sensitometric characteristics of the films under investigation have been studied.

Another important consideration in studying the need of the Super Sensitive film necessitates a study of the quality of the light sources to which this film is exposed. For that purpose sensitometric tests have been made to daylight and to tungsten. Inasmuch as the mode of testing an emulsion to any light source is practically identical we shall for the sake of brevity and clarity consider only the curves obtained by exposure to tungsten.

Figure 1 shows the sensitivity curve of the present and Super Sensitive type of film for tungsten exposures developed for a fixed time, nine minutes in a standard borax developer. It will be observed that the Super Sensitive curve lies above the curve for the present type of film and the separation of these curves gives an indication of the speed difference existing between the two films. In making a numerical estimate of the speed we do not consider the actual density values produced for a given exposure. The customary method is to deduce speed from the exposure value obtained at the point where the straight line portions of these sensitivity curves, extended, intersect the exposure axis. Speed, is usually defined by the following formula:

$$\frac{1}{i} \times C = \text{Speed},$$

where i, the inertia, is the exposure value of the intersection point and C is an arbitrarily chosen constant. For the curves shown in Figure 1 we find that the speed of the Super Sensitive film, as represented by curve No. 2, is three times

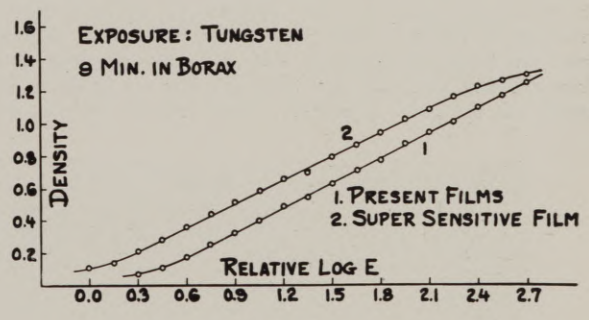


Fig. 1

that for the present type films. Identical tests made to daylight show that the Super Sensitive film is twice the speed of the present type. With reference to Figure 1 attention should be called to the marked difference in the low exposure region, that is in the toe of the H and D curve. In this region the Super Sensitive film definitely differentiates between exposures of very low intensities. Particular reference is made to the exposure region to the left of the relative log exposure value of 0.3.

The cause for the difference in relative speeds between the two types of films to tungsten and to daylight, or to any other source, is entirely dependent upon the color distribution of light from the source and its effect upon the color sensitivity of the emulsion. It is generally known that tungsten, for example, contains a greater proportion of red light than does daylight, and the difference in speed of the two films indicates that the Super Sensitive film must possess greater sensitivity to red light than the present type of film. It is mainly for this reason that the tungsten speed of the Super Sensitive when compared to the present type of film is greater than for a similar comparison to daylight.

The difference in color sensitivity of the two types of films is shown in Figure 2. This figure shows prints of spectrograms of the two types of film when exposed to tungsten. Speed comparisons should not be drawn from these prints as the

prints are so made to show the regions of the spectrum to which each emulsion is sensitive. The figures given represent wave lengths and beginning at 40 in the blue violet region we have increasing wave lengths through the blue violet, blue, green, yellow, and orange as far as the deep red given at a wave length of 68 microns. The Super Sensitive film shows an increased concentration of sensitivity in the region around 64 microns. The Super Sensitive film confines its sensitivity to the definitely visible portion of the red end of the spectrum, while the present type of films shows an extension into the deep red and encroaches upon the near infra-red region. This concentration of visible red sensitivity gives a marked advantage to the Super Sensitive as it is the extension of red sensitivity into the region of longer wave lengths which is a contributory factor in the production of chalky highlights under tungsten illumination. This is eliminated to a marked degree with the Super Sensitive film.

A complete study of an emulsion's sensitivity to color necessitates actual speed measurements to the three major portions of the visible spectrum, namely to blue, to green, and to red light. For the purpose of obtaining such information actual speed tests, similar to those shown in Figure 1 and later verified by practical exposure, were made to daylight through the No. 49 (blue), 58 (green), and 25 (red) filters. Speed values determined from such tests show that the Super Sensitive film has 75% greater speed to the blue, 200% greater for the green, and from 400 to 500% greater for the red exposures. Such sensitivity naturally lends to a better and more intelligent use of filters, either for straight photography or for trick work.

Another important consideration in the comparison of present and Super Sensitive film pertains to contrast and the rendering of shadow detail and softer highlights. Figure 3 shows for tungsten exposures the difference in time of development between the two types of film to produce equal degrees of contrast (gamma). These curves are of equal

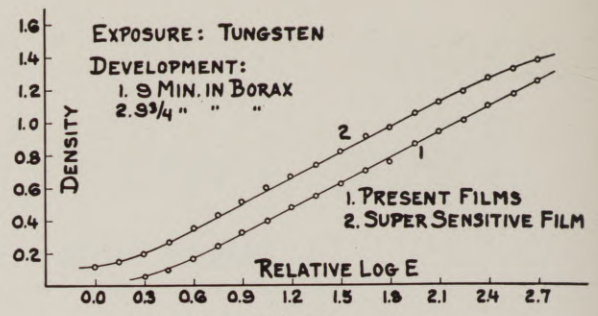


Fig. 3

gamma and the data contained shows that it was necessary to develop the Super Sensitive film three quarters of a minute longer to produce this effect. Furthermore, greater density is picked up in the low exposure region. This is mostly accounted for by the increased speed of the Super Sensitive emulsion, but it is this ability to pick up and differentiate between these low intensities which gives the high order of shadow detail rendering which is shown by this Super Sensitive emulsion. On the other hand, in the region of high exposure it will be observed that the Super Sensitive film shows a tendency to break into a shoulder, while the present film continues as a straight line. This is at least true for the series of exposures shown in the figure. This break into a shoulder lends to softer highlight rendering and still permits of very definitely separating highlight intensities and thus produce details in this region.

Figure 4 shows in much more detail the relationship existing between contrast (gamma) and time of development. These curves, made from exposures to tungsten, represent what are commonly referred to as time-gamma curves and they show the rate at which gamma builds up with increasing

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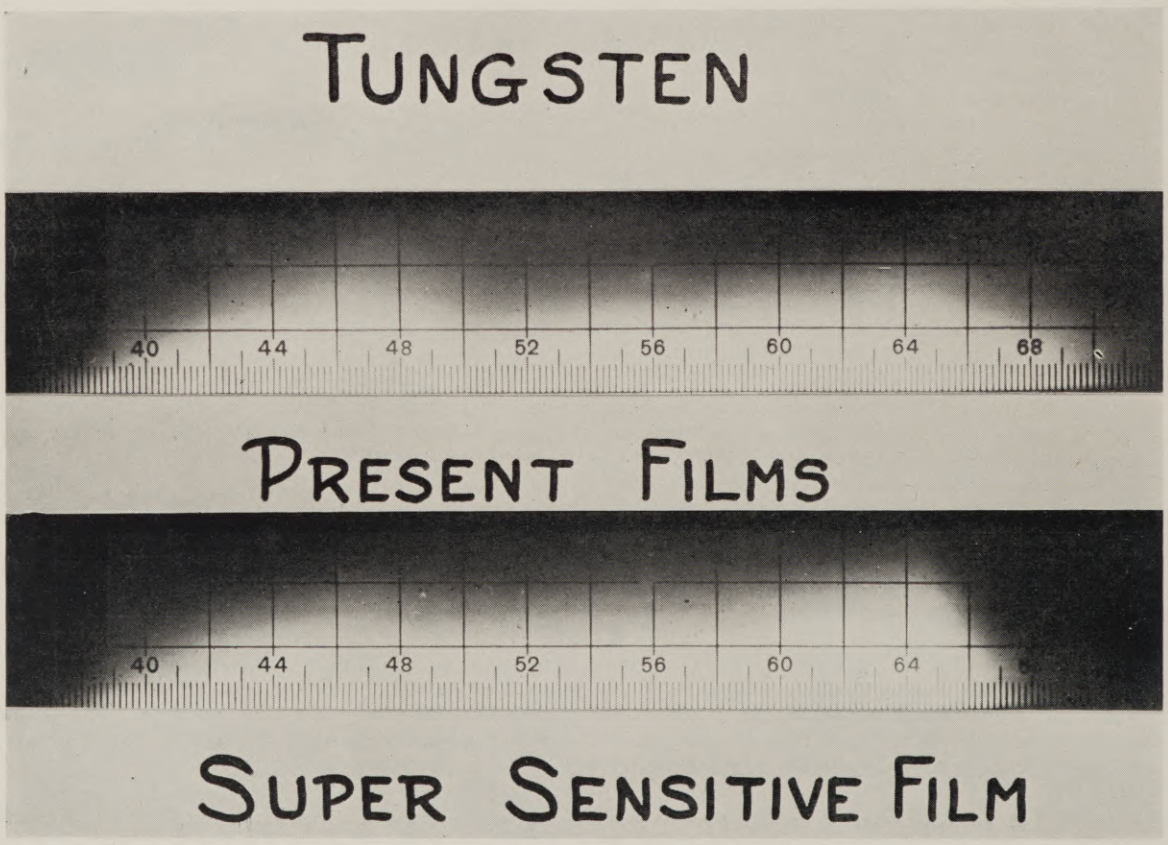


Fig. 2

Three Color Subtractive Cinematography

by **P. D. BREWSTER AND PALMER MILLER**
Brewster Color Film Corporation

UP TO the present only two color subtractive pictures have been shown, and while great improvements have been made in two color subtractive cinematography, these pictures only seem to stress more greatly the need for a three-color process. It is apparent that color cinematography will never be generally demanded by the public until it can portray colors with a reasonable degree of accuracy.

The problem is divided into two parts: first, the design of the camera, and second, the chemistry and the development of the mechanisms necessary to produce a three-color film adapted for use in any theatre without changes in the projection apparatus.

It is generally conceded that any practical color camera must make its color separations simultaneously to avoid intolerable flashes or fringes of color around moving objects and that all three separations must be made from the same viewpoint; otherwise, it would be impossible to register or superimpose the several component color images in the positive.

Accepting the limitations of a camera for making simultaneous separations from the same viewpoint, the next step is to inquire into the requirements of lenses with regard to focal length and speed. Under sound studio conditions where tungsten light is very largely in use, and where an excessive amount of light cannot be used on account of the incident heat and strain on the actor's eyes, it is necessary to use the fastest possible lens having good color correction. The limiting aperture at the present time is f/2.

The great size of some of the sets used in the studios, and the limited floor space of sound stages, make it essential that the color camera be adapted to use a wide angle lens of not over 50 mm. focus, though 40 mm. would be still better. At the same time the beam splitting system must permit the use of lenses of from 100 mm. to 150 mm. focal length for making simultaneous close-ups and semi-close-ups in connection with a 50 mm. camera shooting long shots.

This is a very difficult requirement for both the 50 mm. and 150 mm. lenses for several reasons. In a 50 mm. camera it is very difficult to get a double beam splitter (adapted to reflect two images and transmit one) in the small lengths of 33 or 35 mm. between the rear vertex of the lens and the focal plane; while in the case of the 150 mm. f/2 lens the cone of light leaving the rear vertex is nearly 75 mm. in diameter, which very greatly increases the size of the beam splitter if no light is to be lost.

Where two or three matched lenses are used, it is necessary to have a beam splitter in front of these lenses to reflect the light rays received from one point into the separate lenses, and where one lens is employed the splitter must be behind to divide the light rays projected from the single lens into three groups. We believe this can be done only in two ways; either by a series of glass prisms, or by means of a highly polished mirror revolving at an angle to the lens and in the path of light rays. This mirror consists of a disk having a number of slots in it so that one portion of the light rays is transmitted through these slots or openings, and after passing through a suitable filter, is recorded as one of the separations; the portion of the light rays which strikes the polished surface of the blades is reflected through another filter to form the second separation; a second mirror revolving at right angles to the first is used for making the third separation. The mirror usually has three blades and makes at least two revolutions for each exposure so that each frame is exposed three or four times. These repeated exposures have proven to give exactly the same effect on the screen as simultaneous exposure of the different color separations.

The glass prism system has the advantage of extending, in effect, the extremely important distance between the rear vertex of the lens and the focal plane in proportion to the index of refraction of the glass used. It also has the advantage of cheapness when compared with the revolving mirrors, while the size of the driving mechanism of the camera is reduced thereby preventing noise and reducing the size of the camera.

The revolving mirror system has the advantage of not having to transmit the light through glass, which results in a loss of light, but what is more important, a possible loss of definition near the edges of the picture if the glass path is too long. Most important of all, it is possible with a revolving mirror system to make three color separations on three separate films from a 50 mm. f/2 lens, without adding any lenses to the standard objective to increase the light path between the rear vertex and the focal plane.

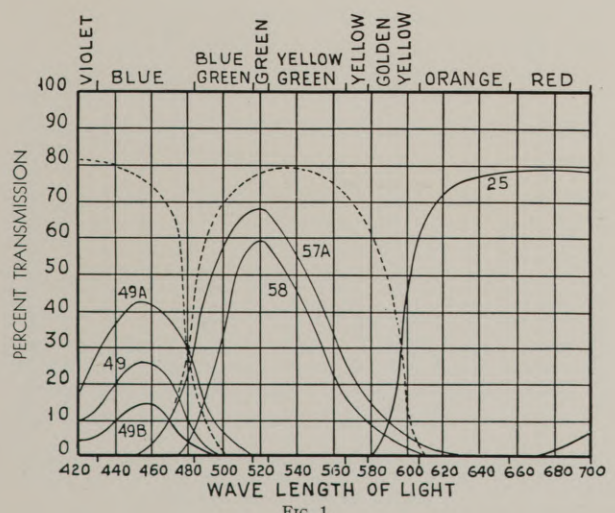


FIG. 1.

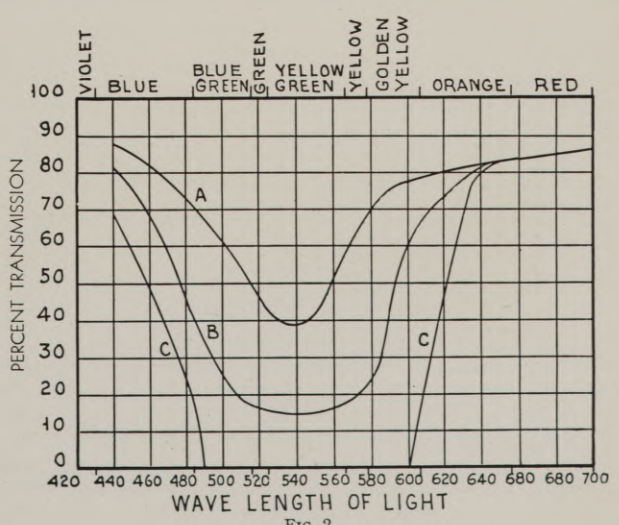


FIG. 2.

The decision as to whether to use one, two, or three films for recording the color separations depends not only on the camera design, but also on the study of the relative efficiency of panchromatic film exposed through three filters in comparison with that of two or three separate films sensitized for the region in the spectrum which they are to record.

Color separations are usually made on panchromatic emulsions by photographing through the Wratten filter No. 25 for the red, No. 57A or 58 for the green, and 49A, 49, and 49B for the blue. Transmission curves for these filters taken from the Eastman filter chart and illustrated in Fig. 1 show that No. 25 is nearly an ideal filter for the red. It transmits light of its own color, red, with high efficiency and then cuts off the other colors abruptly. None of the green filters are nearly as perfect—they transmit blue-green and green fairly well, but cut well into the orange by a long slope, with a possible average efficiency in the very important yellow green region of 30% or 40%. This critical region which largely controls the true color rendering of flesh and foliage is also harmed by the low sensitivity of panchromatic film at this point.

The blue filters 49A, 49, and 49B are even less efficient; their total over-all efficiency being only 0.7%, 0.5%, and 0.3%, respectively, and of their most favorable colors they transmit only 42%, 26%, and 15%. They cut off practically all exposure in the violet and record solely in the true blue region, while the sloping cut transmits some of the blue-green which should not be recorded by the blue separation.

The lack of efficiency of these filters is due to inherent qualities common to all dyes of these colors and cannot be improved. In fact, we have found Wratten filters to be of very high efficiency, and were it possible to have filters in the blue and green as good as the red No. 25, which hypothetical filters are represented by the dotted lines, they would be satisfactory.

By using three separate films for the color separation, it is possible to use an old type of non-color sensitive negative for the blue separation. The sensitiveness of this type of emulsion stops almost exactly at the ideal point, naturally recording the violet as well as all of the blue. Not having to use a filter, its speed is many times greater than if it were necessary to use an inefficient type of blue filter with panchromatic film. Advantage can be taken of this fact by reflecting only a small portion (possibly 10% to 15%) of the light rays received from the lens to form the blue separation.

In case of the green separation, the use of separately sensitized films is even more important, for we then are able to obtain an emulsion which records the green and yellow-green very evenly, almost to the D line, and then abruptly cuts off. Of course this emulsion is sensitive to blue, but this blue is cut off by the use of a filter of high efficiency such as an Eastman K 2. By this means we get a much higher over-all efficiency and are able to record the yellow-green region with much greater fidelity.

The red separation can be made on a red sensitive emulsion, but the present panchromatic emulsion is excellent for this purpose. In either case it is necessary to use the No. 25 filter which cuts in exactly the correct place and which has a very high efficiency.

There is a second point in favor of separate films. It is well known that if different portions of a negative emulsion are exposed to light of different colors, they will develop to different contrasts for the same time in the developer; or these different portions of the films acted upon by lights of different colors will have different gammas. This would result in an incorrect contrast scale of the color positive, and make it difficult, if not impossible, to get a true rendering of highlights and shades; though it would be perfectly possible to reproduce middle tones in the picture substantially correctly. The film exposed to the red light will develop the highest contrast or gamma, and the blue the lowest, for a given time in the developer. For example, if the middle tones were correct one might have red highlights and blue deep shadows.

By determining in advance the gamma curves of the separate films for light of the three primary colors, it is possible to time the development of these films so that they will produce three negatives of equal gamma, or contrast range, from which correct positive prints can be made.

In our opinion, the requirements in the positive for each of the component images of a three color film are: definition, transparency, gradation, and hue.

Definition, especially for the blue-green and magenta images, is a matter of extreme importance. In our experience, it is necessary to retain the outlines and size of the negative image grain on the screen in order to maintain proper sharpness. Anything less than this produces a soft effect which, although very desirable for certain effects, is objectionable for long shots.

Transparency throughout the entire color range is absolutely essential. Three color cinematography requires the exact blending of all colors, and frequently needs a small percentage of one primary mixed with the other two to obtain the exact shade. It is essential that each of these primaries, whether in heavy or light shades, shall be absolutely transparent and not have the heavy tones blocked up by a residual silver or mordanted image. The ideal component image would be like a color filter, pure color imbedded in the gelatin.

Finally we come to the hue and gradation of the color images. We again have the same difficulty in securing dyes

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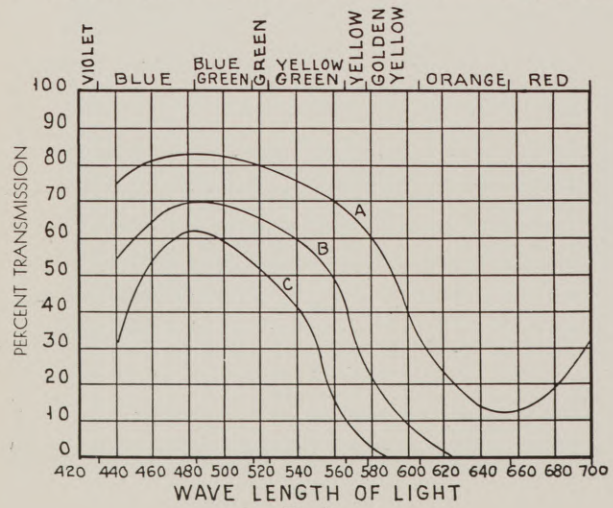


Fig. 3.

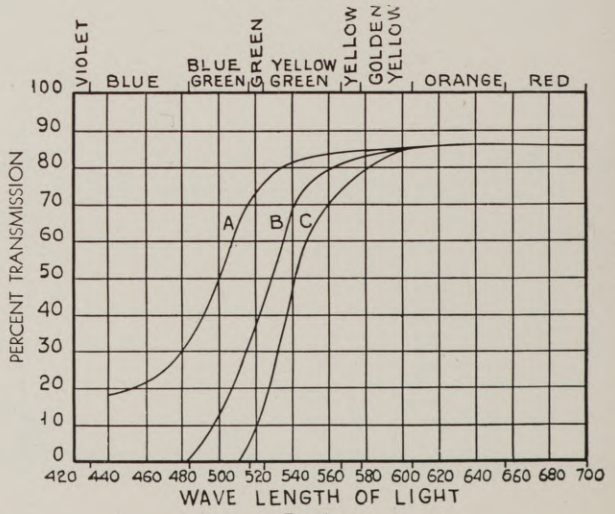


Fig. 4.

The Pedagogy of Visual Education

by **HERBERT SORENSON**
Assistant Professor in Education, University of Minnesota

I WAS asked by Mr. Hall, the editor of The American Cinematographer, to picture for his readers some of the instructional uses made of visual apparatus in my Minneapolis environs. No complete and exhaustive survey was wanted but a snatch here and there to illustrate effective use of pictures, slides, and film for teaching and research purposes.

To study the use of pictures and slides the writer went to the Calhoun School in Minneapolis of which Miss Ella Probst is the principal. This school, as well as many others of the excellent schools in Minneapolis, makes extensive use of visual presentation by means of lanterns and slides. Miss Probst and her teachers have ingeniously integrated visual presentation into their scheme of education.

Although this article is being read primarily by those who are not educators, I shall nevertheless describe in educational terms the visual presentations as I saw them. I am not competent to discuss the technical phases of visual education.

The significant thing that I wish to point out is not the nature of the apparatus. Whether it is or is not the latest issue from the manufacturer is not my concern. I wish to point out that visual instruction through projection can be fitted into school room procedures and satisfy the most advanced educational philosophy. Psychologically visual education has proved itself to be effective. Freeman and Wood, two eminent American psychologists, showed that children whose study was supplemented by visual instruction obtained more information than those who were denied such instruction.

Miss Probst took the writer to visit her class rooms in which instruction was supplemented by the use of lantern slides. A description of some things seen will lay a basis for showing that visual education does not lead to a mechanization of the teacher, but that it leads to the decided opposite. In a 6A grade a mechanical drawing of a marionette stage was projected on the blackboard. Two views were shown. The depicted stage was actually being built in the school for actual use. A boy had drawn two views of it on ground glass plates and the problem of the class was to construct a curtain for the stage. The projected architectural view on the board was a most valuable propadeutic to working out their problems which were real to them. They calculated costs of the curtain, estimated its length, measured it, and engaged in all the arithmetical processes. The lantern facilitated the whole process by providing a big working drawing which everyone could see.

In a 6A room by means of a slide, several sentences were placed on the board. The following two sentences are typical of the half dozen or so on the slide.

Is not the sea filled with terrible monsters people asked him.

No, that is only a foolish idea he replied.

These and other sentences were projected on the board and the pupils' problem was to punctuate them correctly. A pupil went to the board when called upon and put in the correct punctuation marks or rather those which he thought were correct. There were forty or more pair of eyes watching for errors. Think of the economy. One projection gives every child a "copy." The board is erased except for the few punctuation marks by simply withdrawing the slide, and then all this can be "written" on the board again by re-inserting the slide in the lantern.

The marvel of this method was displayed in the lower grades. In a little class of first graders with less than a month's attendance one saw reading ability in children of such quality that all their parents would be prompted to believe in hereditary transmission of school abilities. These youngsters had visited the school garden and then upon their return to their class room had reported their experiences. The pupils and teacher compounded these little reports into a story which the teacher transferred to a slide. This was one of the stories:

We went to the garden.

We saw some parsley.

The parsley was green.

The rabbit eats parsley.

The children pointed out words which they knew. They read their own story which had emerged from their own experiences, and again a single lantern projection furnished a "COPY" for each of forty children.

The use of lantern slides gives opportunity for children's art abilities to express themselves. In a 6B room we heard a child tell the story of Hans Brinker and the Silver Skates and we saw colored illustrations of the story while the boy told it. About a dozen colored slides were shown. These were painted by the children. They were not copied but represented scenes which the children imagined from the story. The class illustrated Eskimo life with slides which they had drawn and colored with colored pencil.

The descriptions given, although rather fragmentary, may help to illustrate real educational uses of the projection lantern for teaching. Teaching by means of slides and films is not limited to only a few subjects but can include every subject of the curriculum.

Educationally these procedures are not only sound but commendable. When children prepare their own diagrams of a marionette stage which they are building to use, when children are painting illustrations from their imaginations, and when little tots in the first grade are putting into stories their own experiences, we have what is termed a real purposeful activity or a project. To the child these experiences are real, they emerge from a natural setting. They may exercise initiative, and trade-mark their little creations with their own hallmarks of creativeness. They work together, learn cooperativeness, weigh, evaluate and pass judgments. A major vehicle in these educational activities is projection by means of slide and lantern.

A discussion of how slides are made is probably in order at this time. When a highly colored slide is wanted such as was used in illustrating Hans Brinker and the Silver Skates, plain glass is used. This glass is painted with highly colored paints but such painting is done only by those in the 5th and 6th grades and not the lower grades. When the lower grades wish a colored illustration such as used in the Eskimo study reported, they draw on ground glass with colored pencils. Diagrams and figures like those referred to in the arithmetic class are drawn on ground glass also. Class and group written work can also be recorded on these slides. Both the plain and ground glass slides can be washed and used over and over again.

For projecting word, phrase or sentence material, it is first typewritten on celophane, a celluloid like paper, which is placed in a fold of red carbon paper when typed. The celophane paper is then sealed between two plates of plain glass by pasting a special edging over their edges. Then a permanent instructional slide has been made. These can be filed and really constitute a library of instructional materials.

(Continued on Page 22)

Fig. 1

F TABLE FOR STANDARD FILTERS AS USED WITH

EASTMAN PANCHROMATIC No. 2 AND EASTMAN SUPERSENSITIVE PANCHROMATIC

(Approximately correct)

Without Filter				*f* values with Filter (daylight filter factors and 170° Shutter opening)																	
				Aero No. 1		K 1		K 2		K 3		G		A		B		C		F	
No. 2		S		No. 2	S	No. 2	S	No. 2	S	No. 2	S	No. 2	S	No. 2	S	No. 2	S	No. 2	S	No. 2	S
f	%	*f*	%																		
1	100.00	1.7	33.33		2.46		2.46		1.7		1.44		1.44								
1.5	44.44	2.6	14.81	1.24	2.94	1.24	2.94		2.6		2.12		2.12		1.3		1.2		1.44		
1.8	30.86	2.9	10.28	1.46	4.4	1.46	4.4	1.04	2.9		2.51		2.51		1.56		1.46		1.72		1.08
2.3	18.89	4.0	6.29	1.88	5.8	1.08	5.8	1.32	4.0	1.06	3.14		3.14		2.1		1.88		2.24		1.34
2.7	13.71	4.8	4.57	2.22	6.2	2.22	6.2	1.55	4.8	1.26	4.2	1.22	4.2		2.32		2.22		2.58		1.64
3.0	11.11	5.2	3.70	2.48	7.2	2.48	7.2	1.75	5.2	1.42	4.4	1.34	4.4		2.62		2.44		2.84		1.8
3.5	8.16	5.9	2.72	2.75	9.4	2.75	9.4	2.25	5.	1.65	5.0	1.55	5.0	1.02	3.00		2.82	1.08	3.10		2.1
4.0	6.25	6.8	2.08	3.22	9.8	3.22	9.8	2.32	6.8	1.9	5.6	1.78	5.6	1.14	3.24	1.1	3.24	1.26	4.0		2.5
4.5	4.93	7.8	1.64	4.00	11.0	4.00	11.0	2.60	7.8	2.1	6.3	2.02	6.3	1.32	4.0	1.18	3.64	1.42	4.4		2.75
5.6	3.18	9.6	1.06	4.30	14.0	4.30	14.0	3.18	9.6	2.65	7.8	2.5	7.8	1.62	4.8	1.49	4.8	1.68	5.4		3.34
6.3	2.51	11.0	0.83	5.40	16.0	5.40	16.0	3.60	11.0	2.90	8.8	2.8	8.8	1.82	5.4	1.70	5.4	1.96	5.9	1.28	4.0
8.0	1.56	14.0	0.52	6.4	20.0	6.40	20.0	4.8	14.0	3.72	11.4	3.54	11.4	2.34	5.8	2.24	6.3	2.34	7.8	1.58	4.9
9.0	1.23	16.0	0.41	7.4	22.0	7.40	22.0	5.2	16.0	4.42	13.0	4.2	13.0	2.64	7.8	2.42	7.4	2.85	8.6	1.82	5.6
11.0	0.82	18.0	0.27	9.00	28.0	9.00	28.0	6.2	18.0	5.2	16.0	4.8	16.0	3.16	10.0	2.98	9.2	3.46	10.6	3.62	6.8
16.0	0.39	28.0	0.13	13.00	32.0	13.00	32.0	9.2	28.0	7.4	22.0	7.0	22.0	4.8	14.0	4.5	13.0	5.2	15.5	3.3	9.6
22.0	0.20	32.0	0.06	18.40	Sh	13.62	Sh	9.9	32.0	10.4	32.0	10.0	32.0	6.9	20.0	5.8	18.6	6.8	22.0	4.4	14.0
32.0	0.08	Sh	0.03	25.00	Sh	25.00	Sh	19.00	Sh	15.0	Sh	14.2	Sh	9.0	28.0	8.25	27.0	10.0	32.0	6.3	20.0

Key: No. 2 = Eastman Panchromatic No. 2
S = Eastman Supersensitive Panchromatic

% = Light transmission in % for given f value
Sh = Reduction of Shutter opening + f 32

L. M. DIETERICH

Screen Definition

by **DR. L. M. DIETERICH**
Consulting Engineer

Part 5

IN VIEW of the commercial introduction of a new highspeed motion picture negative emulsion by Eastman Kodak Co., the author offers in Fig. 1 a chart to the cameramen for quick determination of lens stop values for this new film.

This chart also includes stop values for some of the most frequently used color filters for the regular Dupont panchromatic emulsions and for the Eastman "superpan."

The f values offered in this chart are for practical purposes correct with a total overall speed increase of 3:1 for daylight, successfully tested by the author for black and white pictures as shown in Figs. 2 to 5.

The cameraman has, however, to realize that the speed increase is highest for the red end of the spectrum and especially when used in color photography and filter work this fact has to be well considered.

The speed increase has been stated to be for daylight 75% for blue, 200% for green and 400% for red.

Figs. 6 to 12 show comparative spectrograms, all taken under identical conditions with an incandescent recording lamp and daylight filter (about 5200°K).

Fig. 6 Eastman Ortho.

Fig. 7 Eastman Panchromatic Type 2.

Fig. 8 Eastman Supersensitive Panchromatic.

Fig. 9 Dupont Ortho.

Fig. 10 Dupont Red Ortho.

Fig. 11 Dupont Regular Panchromatic

Fig. 12 Dupont Superspeed Panchromatic.

It has been stated that the Dupont superspeed panchromatic increases the speed 100 per cent over the regular without changing the color balance, but broadening the width of the actinic spectrum, especially towards the red end, which is, the author believes, of a great deal of practical interest.

The reader can draw his own conclusions from the observations and interpretation of these impartially produced spectrograms, especially as far as range of spectrum, color values and their relative speed are concerned.

The proper use of any filter is largely a question of experience, as unfortunately the scientific engineers have so far not been able to develop a practical and permanently reliable exposure meter, especially where specific color values are concerned.

The multiplication factors for various filters are only an approximate guide and subject to sometimes radical changes when either stop values or shutter openings are selected. The color values of the object, the character of the illumination or light source, the actinic spectrum reaction of the emulsion, the desired emphasis of certain colors, special effects radically different from correct reproduction of inherent object characteristics—all these various conditions influence the selection and proper use of filters and the determination of correct exposure by stops and shutter opening control.

Figs. 2 and 3 show as an example the use of a K3 filter on Eastman superpan using a 50mm. Detrar lens. The purpose of this selection was to reduce the haze and corresponding overexposure for the more or less distant details of this landscape.

Deep atmosphere (blue sky) especially when moisture- or dust-laden (haze) acts like a more or less efficient blue filter with dispersive characteristics under haze conditions, thereby destroying the desired definition.

The use of a filter absorbing such undesirable rays, usually of yellow characteristics and of densities depending upon haze and light conditions greatly improves definition.

Fig. 2 shows a photograph of a landscape with distant haze.

Fig. 3. The same camera angle using a K3 filter and a stop increase from f 14 to f 9.

This was determined upon as follows: Under the existing light conditions (bright sunlight at about 1 p. m.) a stop of f 8 would have been in order with a standard panchromatic film. Using Eastman Superpan f 14 was selected as correct.

This stop value had to be increased to f 9 when using filter K3 with the results shown in Fig. 3.

Fig. 4 shows another view taken with a 50mm. Detrar lens and Eastman Superpan. A stop value of f 11 was used.

To produce a desired moonlight effect a Moore filter No. 2 (combination of Wratten filters No. 64 and 23) was selected with a corresponding stop increase to f 4.8.

Where higher light and more glaring surface reflections exist (sunlit snow scene) Moore filters No. 4 (No. E22 and B58) or the less dense No. 6 (No. E22 and B57, A3) are very effective.

(Continued on Page 35)



Fig. 2

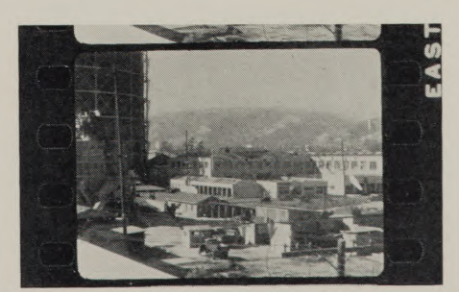
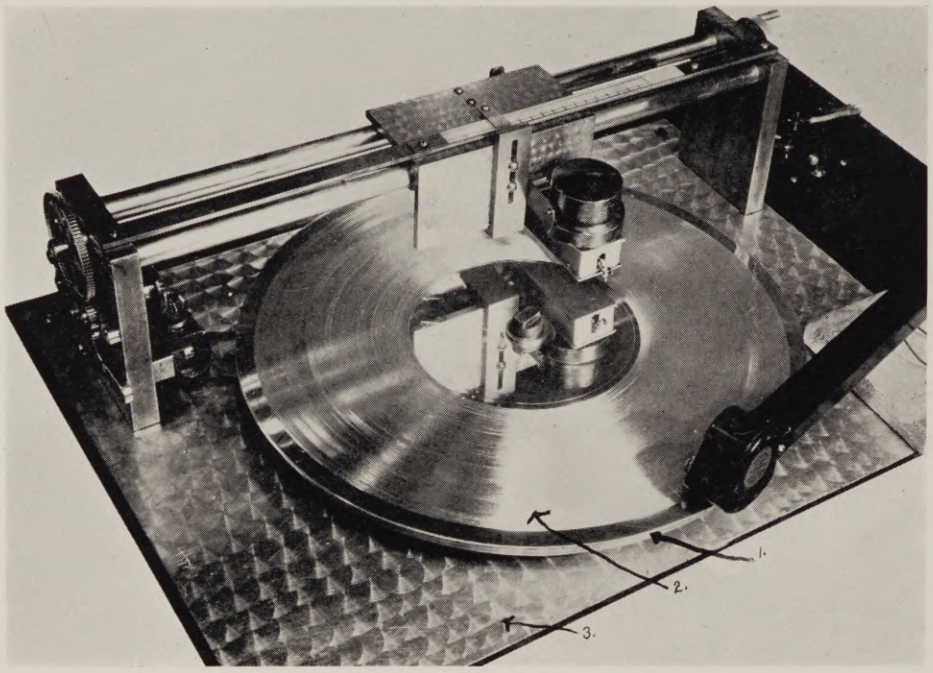


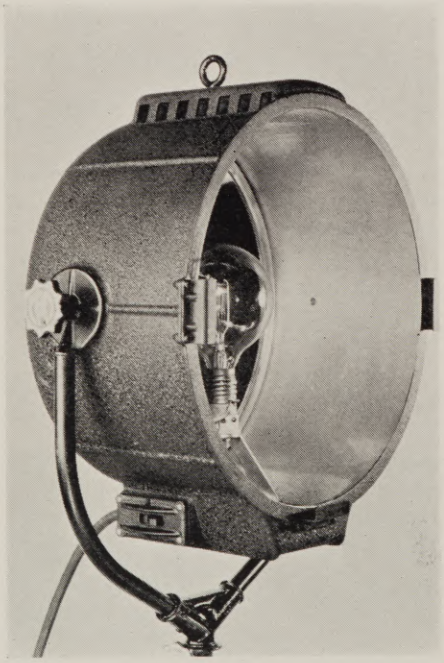
Fig. 3

First Award



Aluminum Disc Recorder for talking movies and electrical transcription. Entered by G. Russell Carrier, Inc., Akron, Ohio

Second Award



The Integral Inkie made by Mole-Richardson, Inc.

Third Award



Microphone entered by Arthur Reeves of Hollywood Camera Exchange

Akron Firm Wins Boothe Contest

Mole-Richardson, Inc., and Arthur Reeves Win Second and Third Awards

FIRST PRIZE of $100.00 in the Boothe Company Aluminum Contest, conducted through this magazine by the Boothe Company of Los Angeles, was awarded to the firm of G. Russell Carrier, Inc., Akron, Ohio.

Second prize of $60.00 was awarded to the firm of Mole-Richardson, Inc., lighting equipment manufacturers, of Hollywood.

Third prize of $40.00 was awarded to Arthur Reeves of the Hollywood Camera Exchange, Hollywood.

Mr. I. J. Boothe, head of the Boothe organization, sent the following letter to the editor of this magazine:

American Cinematographer,
1219 Guaranty Bldg.,
Hollywood, California.

Attention: Mr. Hal Hall, Editor.
Gentlemen:

It is with a great deal of pleasure that we hand you the checks for the winners of first, second and third places, $100.00, $60.00 and $40.00 respectively, in the Boothe Company Aluminum Contest.

This contest was originated with the idea in mind of stimulating the interest in aluminum and aluminum alloys, in the motion picture field, where we felt that the lightness and strength, (equal to that of steel) of these metals would prove advantageous to the industry, especially for portable equipment.

We take this opportunity to congratulate the winners of the prizes and also to thank the judges for their efforts and time spent in examining the entries and awarding the prizes.

We also wish to express our appreciation to the American Cinematographer for the cooperation which we have had throughout the contest.

Very truly yours
BOOTHE COMPANY
I. J. Boothe

The first prize was given for an aluminum disc recorder for talking pictures and electrical transcription. Specifications follow. It is for making professional thirty-three and one-third recording, and also for amateur and home seventy-eight R. P. M., using aluminum disc eight to seventeen inches in diameter, twelve gauge. The recorder has an aluminum base eighteen by twenty inches and one-quarter inch thick. The revolving table is of cast aluminum five-eighths of an inch thick, and is driven by one hundred and ten volts synchronous motor, with cutting arrangements and traveling horizontal across the face of the aluminum disc. The picture on the opposite page gives a fair idea of the device. Arrow 1 points to revolving table, 2 to aluminum disc, and 3 to the aluminum base.

The second award was given to Mole-Richardson, Inc., for their new lamp, the "Integral Inkie," the particular lamp entered being M-R Type 218—18 inch Sun Spot, pictured on opposite page.

From the specifications with entry we give you the data as proposed by this firm:

"This lamp has been designed to overcome a difficulty which has heretofore been present in all lamps of this general type, i. e. the production of slight cracking and popping noises. Such noises we know are due to the expansion of the various parts of the lamp when heated by the incandescent light source.

"The inherent fault with all previous designs has been the multiplicity of parts having various expansion relations to one another. We have gone to the heart of the problem and produced a lamp which consists essentially of one integral casting. The drum, mirror dome, ventilator, light baffles, lamp trough, and switch box, all of which have heretofore been cast of separate parts, are in this new lamp produced in one single aluminum or aluminum alloy casting. The few parts such as mirror ring, slide rods, etc., are so designed that they are free to expand without restriction, and hence will be incapable of producing any sounds due to expansion.

"The only parts of this lamp head which are not made of aluminum or aluminum alloy are the eye bolt and nut, the attaching screws, the mirror supporting springs, the focusing screw and handle, the slide rods, and their locking nuts, the offside trunion bearing, studs, and electrical conducting parts.

"The pedestal is constructed of duralumin tubing and castings of No. 43 alloy, with the exception of the clamp collar which is brass.

Total weight of complete lamp	**62 lbs.**
Weight of mirror, cable, stage plug, screws, electrical connections, socket, and casters	**15¼ lbs.**
(These are parts purchased outside by us and are not obtainable in aluminum alloys.) Less	**15¼ lbs.**
Total weight of fabricated parts	**46¾ lbs.**
Weight of fabricated parts not composed of aluminum alloys	**6 lbs.**
Total weight of aluminum alloy parts	**40¾ lbs.**
Percent of fabricated parts that are of aluminum alloys	**87%**

Third prize was awarded to Mr. Reeves for the Audio-Camex type microphone. The description is given as prepared by Mr. Reeves in submitting his entry:

The transmitter diaphragm which is less than one thousandth of an inch thick is made of duraluminum.

The duraluminum diaphragm is so sensitive that it records the sound vibrations perfectly at a distance that enables the cameraman to photograph a scene without getting the microphone into the picture.

The Audio-Camex bullet type microphone is constructed of about ninety per cent aluminum and duraluminum. The only parts of the microphone that are not aluminum are the parts where electrical characteristics demand a different metal.

The Amertan transformers have aluminum covers. The aluminum shields between the amplification stages and the tubes add to the rigidity of the frame work. The swivel joint of the transmitter cup is machined of duraluminum. The covering is made of aluminum tubing. The Cannon connectors which we adapt to the microphone is made one half aluminum.

The judges of this contest, which was started last October, were Mr. Hal Mohr, President of the American Society of Cinematographers; Mr. John Arnold, Treasurer of the American Society of Cinematographers, and head of the Camera Department of Metro-Goldwyn-Mayer Studios; and Mr. William Johnson, head of the Electrical Department of the R-K-O Studios.

The Boothe Aluminum Contest aroused interest in all parts of the United States, and has proven again that Aluminum is rapidly becoming more and more a real factor in the motion picture industry. We cannot outline here the various devices suggested through this contest, but they were varied and many. Due to the lightness and strength of the aluminum alloys, this metal is rapidly creeping in to replace the heavy and cumbersome metals that have been used in the past.

Hal Hall SAYS

Credit

FOR the first time in many a moon the picture critics on the daily papers took occasion, on the opening of "East Lynne," to give special mention to the man who photographed the picture. It was really gratifying to this writer who has always fought to bring the cameramen into the limelight where they belong. Mr. John F. Seitz did a mighty commendable piece of cinematographic work in that picture, and he deserved mention by the critics who reviewed it in Los Angeles.

Why isn't this done more frequently? That is a question this writer has been asking for years. I do not mean to detract from the work of the director, author or actor—or even the supervisor. But I do think that the cinematographer should receive his share of attention, whether it be a knock for poor cinematography or a boost for good work. Not all pictures are well photographed, we grant. But—and we ask you to give this a lot of thought—there is a darned sight more good cinematography than there is good direction, story-writing or acting in the general run of Hollywood pictures. If you do not believe me, just go and look at some picture that has proven itself a dub as far as direction, acting or story is concerned. You will see that usually the redeeming feature of the picture is good photography. In fact, there have been, and undoubtedly will be again, many pictures that have been saved by the outstanding photography of a man whose name never is seen in the papers.

Many a star would never twinkle if it were not for the genius of a cameraman who knows how to light and photograph her so her blemishes and bad points do not show. Many a director would have long ago been banished to oblivion if it had not been for the man who photographed his pictures. Many a picture would lose a large part of its value if the cameraman did not portray its mood or atmosphere. So, why not give him a little credit if he does a good piece of work! Or, give him a hard rap if he falls down. We all like appreciation, and we all like criticism if we deserve it.

Congratulations

THE EASTMAN KODAK COMPANY and the firm of Jules E. Brulatour are to be congratulated upon the excellent manner in which they introduced their new super-speed film to Hollywood. Rarely does one see a job handled so well as was that. An excellent dinner at the Uplifters Ranch, an atmosphere of rather mysterious expectancy—and then—with no attempt at sales talk, the film was introduced. Mr. Edward O. Blackburn, of the Brulatour organization; Mr. Ted Curtis of the Eastman Kodak Company; Mr. Emery Huse of the Kodak Company; Mr. George Gibson of the Brulatour organization, and many others who helped in the plans deserve praise.

Stork Arrives

THE WELL known Stork has been quite busy about Hollywood of late. During the past month he brought a daughter to Mr. and Mrs. John F. Seitz, and a daughter to Mr. and Mrs. Edward O. Blackburn. Friends of both couples will be pleased to know the mothers and the daughters are doing well.

Opportunity

JUDGING from my mail, Hollywood must seem like the pot of gold at the end of the rainbow to a lot of people scattered throughout these United States. An average of five or six letters a week come to me from readers asking me to advise them as to how they may best break into the picture industry in Hollywood. Some want to become sound engineers, some cinematographers, others assistant directors, and many wish to become actors. We take this opportunity of answering all who have written, and all who may write in the future.

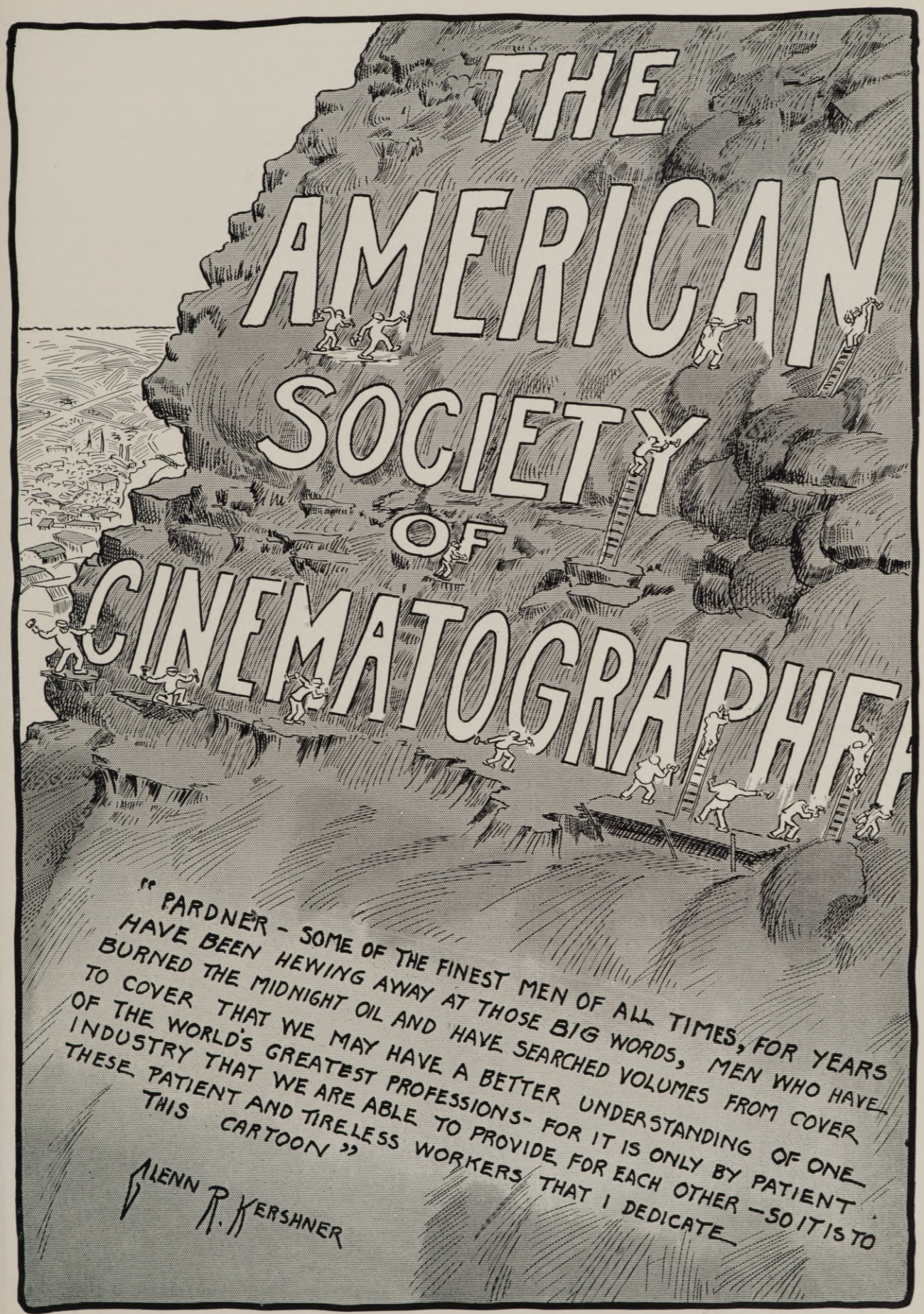
If you have a good job where you are, stay there! Hollywood has proven to be a pot of suffering and disappointment to thousands who have given up good, steady jobs at home for the glamour of the studios. You will find many ice wagon and milk wagon drivers here who arrived in Hollywood fired with ambition to become one of the motion picture people with a mansion in Beverly Hills. This town has the most beautiful laundry workers and waitresses of any town I have ever seen. A poll of both classes would reveal many a home town beauty prize winner who had come to break into pictures, only to go broke and to the job of slinging hash or ironing clothes.

A novice cannot hope to compete with cameramen of years experience. It takes more than ambition to crash the studio gates when there is more experienced talent at hand than the studios can use. Just because you know how to take your radio apart does not guarantee your being hired as a sound engineer. Unless you have a bankroll that will keep you for several years; and unless you have ability and the intestinal fortitude to stick it out month after month and still keep smiling—stay on your job at home.

If you want more information, read the statement from the Academy of Motion Picture Arts and Sciences on page 42.

The Passing Show

WITH the advent of talking pictures Hollywood lost a type of individual that, to this writer, added much in the way of atmosphere to this picture town. We speak of the Poverty Row type of producer. True, the atmosphere he added sometimes reminded one of the lowly polecat. However, like the above-named animal, he made his presence felt, and was part of the big show of Hollywood. You know the type. They made more pictures, conversationally, at the corner of Sunset Boulevard and Gower street, than they did in the studio. But they were colorful. Now and then one of them would surprise the picture world with a production that would really have excellent merit. And then he would start up the stairs. Many a successful man here now started on Poverty Row. It seems too bad that the high cost of sound should have wiped that type out. To be an independent now, one must have a lot of money, for sound costs just that. Maybe the day will come when sound will cost less. And then perhaps we will see the old, colorful type spring up again. It will be a blessing for a lot of embryonic directors.


THE
AMERICAN
SOCIETY
OF
CINEMATOGRAPHERS
" PARDNER - SOME OF THE FINEST MEN OF ALL TIMES, FOR YEARS HAVE BEEN HEWING AWAY AT THOSE BIG WORDS, MEN WHO HAVE BURNED THE MIDNIGHT OIL AND HAVE SEARCHED VOLUMES FROM COVER TO COVER THAT WE MAY HAVE A BETTER UNDERSTANDING OF ONE OF THE WORLD'S GREATEST PROFESSIONS- FOR IT IS ONLY BY PATIENT INDUSTRY THAT WE ARE ABLE TO PROVIDE FOR EACH OTHER -SO IT IS TO THESE PATIENT AND TIRELESS WORKERS THAT I DEDICATE THIS CARTOON "
GLENN R. KERSHNER

Magnacolor Film Announced

Consolidated Film Industries, Inc., Ready for Quantity Production

CONSOLIDATED Film Industries, Inc., New York and Hollywood, have just announced a new natural color film which has been perfected by them after long experiment. The new film is called Magnacolor, and is based on the bi-pack film process.

The bi-pack process makes use of two negatives running emulsion to emulsion. The front negative (nearest the lens) consists of film carrying emulsion sensitive to blue rays. A coating of special red dye is placed on top of the gelatine emulsion of this film. The back film consists of a highly panchromatic negative, mainly sensitive to red rays. When the two films are at the aperture, emulsion to emulsion, the light passes through the back of the first negative (blue sensitive). This gives the blue image. The light then strikes the coating of red dye, which absorbs the blue rays and allows the red rays to pass through to the second negative, thus giving an image of the red portions of the subject.

Officials of the Consolidated Film Industries claim that with Magnacolor you get a sharpness equal to black and white, and that the colors are natural and pleasing and can be held absolutely uniform in quantity production. They also claim that anything in monochrome is equally possible with Magnacolor, with no change other than the use of Magnacolor films and a slight adjustment of the camera gate.

In the announcement from Consolidated, officials say: "Not only can any qualified cameraman make this film, but he can use any technique known in black and white photography such as light effects, double exposure, changing of lights during scenes, and trick effects. Camera manufacturers have arranged for the adaptation of black and white cameras to color at small expense, making the cameras available for both color and black and white work.

"The Magnacolor process," continues the announcement, "is founded on an extremely comprehensive set of patents for which Consolidated Film Industries has an exclusive license. These patents include methods of assuring exact registration in printing, the application of the colors in processing the positive film with many modifications of methods for this, basic patents relating to the use of positive film for color work, and numerous auxiliary patents for the production of the process. In addition to these patents which so amply protect the user of color film, Consolidated Film Industries, Inc. are the owners of many patents covering developing and printing machinery and other apparatus widely used in film processing.

"The greatest difficulty in color production has always been the lack of photographic and mechanical knowledge as applied in the processing of black and white negatives and prints which are the very foundation of successful color processing. Because it has such knowledge, the Consolidated was able in a very short time to perfect the bi-pack method to a state where commercial release prints can be done with the same precision as black and white release printing in the most economical manner possible.

"It is obvious that in using two negatives, each of which contains a partial record of the colors photographed, that there must be a correct balance establishing the latent color values of these negatives when they are developed, and later when they are printed and colored on positive stock. The final results are doomed to failure unless the laboratory doing the processing has had knowledge of all its major and minor difficulties including the balancing of negatives and positives. It is this knowledge of the balance of values in black and white film, backed by years of experience and organized training for such work which has made it possible for Consolidated to produce the splendid new color film and makes the company feel secure that the leader in the field will be Magnacolor.

"Not only is this technical knowledge of film processing essential to successful color production, but it is just as necessary that the producers of color film have a complete mastery of laboratory machinery. Consolidated has the advantage of fifteen years' experience in this field. These fifteen years represent an accumulation of technical knowledge gathered by the welding together of the most representative laboratories in the country into one large, single organization. Such a combination of units into one organization has resulted in a vast body of technical knowledge executed and administered by experts. All of these factors combined to give Magnacolor its outstanding superiority.

"Consolidated is prepared to offer cooperative service to any cameraman or producing organization which desires to learn more about the technique of color photography and to apply it in their pictures. Consolidated believes that there is a great future for color films not only in theatrical motion pictures but also in industrial and educational pictures—two fields, the possibilities of which have not yet been developed.

"In addition to the regular laboratory service on Magnacolor, Consolidated will have a staff of trained cameramen with full equipment ready to do photographic work for such clients who have no equipment of their own. In the case of industrial picture producers, Consolidated is prepared to offer its service and advice in the writing of scenarios to give the work dramatic flavor, as well as on technical subjects. Consolidated Film Industries have equipped an up-to-the-minute plant at 959 Seward Street in Hollywood for the exclusive production of Magnacolor. This new plant is ready to give complete service and prompt delivery. The company will also use its New York laboratories in connection with the Color Department, particularly for industrial color pictures."

●

Three Color Subtractive Cinematography

(Continued from Page 12)

that approximate the ideal as noted in the case of the filters.

The ideal requirements of the three color dyes are that each should transmit as nearly as possible 100% of the light of two of the three primary colors and in its heavier densities absorb entirely light of the other primary color.

In Fig. 2 Curve C shows the transmission of a heavy step in the magenta "H & D" strip and curves A and B the lighter steps. This dye passes nearly all the blue and red but no green. Figs. 3 and 4 show the blue-green and yellow curves for the same densities.

In order to obtain a good black it is necessary that each of the three colors absorb practically all light of one of the other primaries, and it is equally important that each in their lighter gradations pass practically equal quantities of the corresponding primary in order to obtain good greys, as is seen by the opening of the filter in the lighter steps. With the three dyes shown equal densities of the three super-imposed yield a grey.

●

The above paper was presented at the Fall meeting of the S. M. P. E., and is printed through the courtesy of the S. M. P. E. Journal.
—The Editor.

Eastman Super Sensitive Panchromatic

(Continued from Page 10)

time of development. The rate of increase of contrast with increased development time is appreciably less for the Super Sensitive film, as will be shown by a study of the curves in Figure 4. This means that in the handling of the film during development there is relatively little chance of either under or over developing. Errors of the order of 25% in development time will have a much less marked effect on the Super Sensitive film. In other words the Super Sensitive film gives to the laboratory man that one thing which is so important to him and which is colloquially referred to as "development latitude."

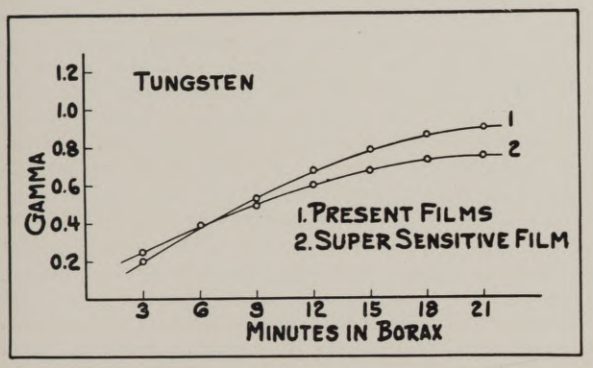


Fig. 4

There is just one caution which should be mentioned at this time. Due to the increased sensitivity of this emulsion, the handling of this film cannot be successfully accomplished unless the illumination from the present safelights is reduced appreciably. The ideal condition under which to handle this film would be total darkness and no doubt this condition will prevail inasmuch as many camera loading rooms and laboratories which process negative on machines now operate in almost, if not total, darkness. It is felt, therefore, that this will not work any great hardship on the laboratory. However, this word of caution is considered necessary because of the greater increased speed both to white and to colored light of the Super Sensitive emulsion.

It is felt that a summary of the outstanding features of the Super Sensitive film will bear repeating.

1—Super Sensitive film is twice as fast to daylight and three times as fast to tungsten light as the present type panchromatic films.

2—Super Sensitive film shows 75% more speed to blue light, 200% more to green light, and from 400 to 500% more to red light.

3—Super Sensitive film exhibits an appreciably softer characteristic than present films. For the same time of development the Super Sensitive film gives lower gammas. This makes it advisable to develop the Super Sensitive film longer if the same degree of contrast as now accepted is still desired.

4—Super Sensitive film must be handled at a much reduced light intensity in the dark rooms.

●

Johnson Business Head Cameramen's N. Y. Local

O. V. JOHNSON, formerly engaged in location work for the Paramount New York studio, has been named business representative of the cameramen's local in New York. He succeeds Francis E. Ziesse, who will soon announce a new connection.

Talking Movie Proves Effective Aid To Sucessful Selling

HOW THE talking motion picture is being used as a unique and striking aid to successful selling is told in the current issue of the Financial Advertisers Bulletin by Frederick Doyle, advertising director of Smith, Burris & Company, Chicago, central syndicate managers of Corporate Trust Shares.

It has been this company's idea that motion pictures, especially talking films, could be of effective help in selling investment trust securities, and the actual results of the first exhibitions of a three-reel talkie called "An Investment in America's Prosperity" have amply proved this, according to Mr. Doyle.

The theme of this talking picture, as shown on the screen and explained by an accompanying voice, is the closeness to the daily life of America of the companies included in the Smith-Burris trust portfolio. "The different companies are seen at work," says Mr. Doyle, "providing luxuries as well as necessities—harvesting food and bringing it to the table; supplying light, power and heat; providing rapid communication to any point on the globe; and performing a hundred other tasks essential to the very existence of our national life."

The picture is shown by salesmen in various cities. The film is supplied in standard size for regular theatre production and in smaller size for portable talkie machines. Of the portable talkie reproducers over fifty Bell & Howell outfits are now being used to exhibit the picture. This outfit weighs only 88 pounds and is so simple in construction that an office boy can operate it. "In whatever manner it is shown the production is a thrilling talking movie," says Mr. Doyle.

"One of the great difficulties that the bond and stock salesman must cope with," says Mr. Cedric H. Smith, vice-president of Smith, Burris & Company, who directed the production of the film, "is that of making his prospective investor realize the extent and nature of the income producing power behind the particular investment offered. Engraved certificates look much alike, and comparative figures mean little except to statistically minded people. But an investor seeing and hearing a great industrial plant in operation gets a vivid and comprehensive idea of the tangible factors back of his prospective investment."

"An Investment in America's Prosperity" is a Burton Holmes production. The companies whose activities are shown on the screen cooperated by supplying action scenes of their plants, operations and products. A total of 81,500 feet from these films was reviewed and scenes adopted, in addition to many thousand feet of new "shots" taken especially for this new picture. From all this material the picture was condensed to three reels rendering it interesting every second of every scene. The voice and musical parts were synchronized with the picture.

"It was not expected that the film would produce immediate sales," says Mr. Doyle, "yet dealers make such reports as this: 'Every time we run the picture a few more sales are closed. This week we have had a crowded showing every night. Next week we are making, in addition, a showing every day at 12:10 and another at 3:00'."

●

College Board Will Study Sound Films in Education

R-C-A PHOTOPHONE engineers are installing sound apparatus in the auditorium of the State Teachers' College at Cedar Falls, Iowa. This is the first institution in the state to adopt the "talkies" and it is said the college board will make an intensive study of the value of sound pictures in education.

The Pedagogy of Visual Education

(Continued from Page 13)

The key to the successful use of slides and projection equipment is an administrative scheme which facilitates the convenience of their use. In conference with university professors it became apparent that the utilization of visual apparatus depended on its availability and the dispatch with which it could be made available. No one will maneuver administratively or act as an expressman to secure apparatus which he will use for no longer a time than it took him to secure it. Miss Probst attributes the extensive use of visual apparatus in her school to her making the materials available. In the Calhoun school there is an extension cord in every room. In the primary grades there is projection equipment for every two rooms and in the upper grades for every four rooms. There is a headquarters room for every unit of two or four rooms and the actual equipment and proposed use is scheduled on a chart and controlled from this headquarters room. Slides, pictures, views, film, etc., are filed in the principal's office by trained clerks and can be withdrawn for room use as easily as cards can be removed from an alphabetical index.

It is the opinion of instructors that there must be ample projection equipment for regular use. When equipment has to be booked for, transferred, set up, room arranged for its use, etc., the instructor does not use it. Equipment should be in rooms ready for use and if transfer is made, it should be limited to buildings in which the rooms are close together and possibly limited to a single floor. When buildings are planned, foresight should include special instruction for visual education. In physics department projection apparatus is generally an integral part of the lecture rooms' instructional equipment, and consequently is extensively used. Apparatus for visual instruction should be regarded as microscopes and books are regarded. No one thinks of limiting student groups to one copy of a book or one microscope. There are several copies of a book and many microscopes. One should regard visual apparatus similarly. There should be enough to be easily available for those who wish to use such equipment.

Wherever motion or activity is an important factor, films constitute a very essential phase of instruction. In the inland sections, remote from the ocean, films bring to zoology classes realism in instruction that otherwise would not be obtained. The teaching of sea life is quite barren without showing the motion and behavior of different forms of sea life. Films bring to the zoology student in realistic manner the behavior of the studied sea forms.

Psychology being a study of behavior can make extensive use of films to study reactions to specific situations where stimuli are controlled. Films are made of infants and preschool children, of rats in mazes, monkeys in cages, adults working puzzles and of many other situations.

In 1929 some of the eminent foreign psychologists brought to America films which depicted their experiments. Pavlov, the great Russian psychologist, had a film illustrating the conditioned reflex whose importance is attested to by its being the cornerstone, if not the foundation, of a large school of psychology.

When Koehler, the eminent German psychologist, was at Minnesota he showed his studies of monkeys by means of films. The films were without doubt the most efficient vehicle for pointing out in the actions of his monkeys, his theories of behavior. To illustrate the research of Pavlov and Koehler, visual presentation through the medium of the film seemed to arouse much more interest and impart better understanding than numerous lectures or pages of published material could have done. One can hardly attend a scientific meeting and not see the research of some eminent scholar on the screen.

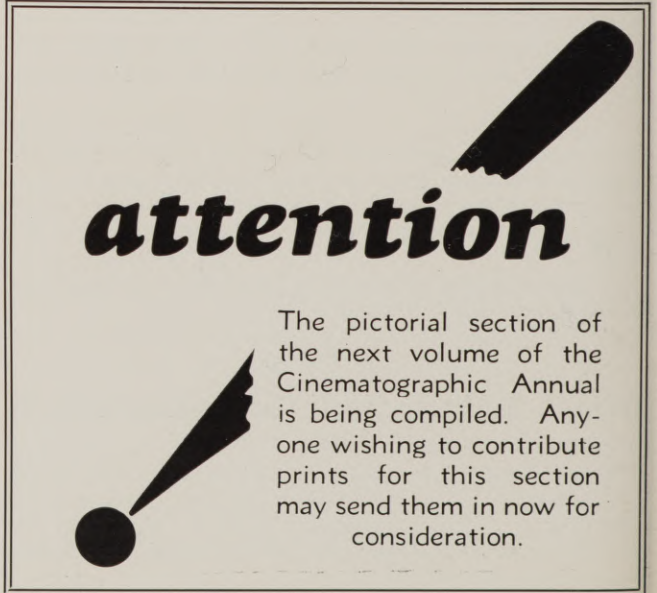
In phases of instruction such as typewriting and penmanship where efficient coordination of movements that make up skills are being taught films can be made which illustrate effective methods. Typewriting has been taught with unusual effectiveness by preparing films showing the techniques of experts. The film company that has engaged a national tennis and golf star to illustrate how to play the game of tennis and golf is entering into a field of pedagogy with limits for actual class room instruction that are very remote.

Education by means of films is not new by any means and yet only beginnings are made. Talking accompaniment is certain to be an essential instructional phase of teaching by means of films. When experts make a film it goes without saying that they can provide better oral explanations than can the average class room teacher on either grade, high school or university level.

The next important step will have to include the preparation of educational films by scholars and scientists. The technical phases of directing, photographing, recording, etc., are well in the hand of film companies with their auxiliary research laboratories, and this part of the problem is not the one referred to in the previous statement. What is meant is that educators, be they historians, physicists, psychologists, geologists, zoologists or what not, will have to devote themselves to the preparation of films in their different subjects just as they now prepare texts, monographs, and published articles.

It is conceivable that in many courses or subjects in grades, high school or college, the seeing and hearing of a prescribed number of films correlated with the courses will be considered as important an integral part of a course as the reading of assignments and the hearing of a fixed number of lectures. Just as book companies now announce new books in a subject or a field of study, some companies will announce new films in the various phases of study and learning which are available for instructional purposes. This is being done to some extent now.

At the University of Minnesota a committee on visual education is working to further and expedite instruction by means of projection apparatus. The interest is not merely an administrative one which concerns itself with effective use of available means, but one that looks forward to research and creative work in the production of instructional films. A depository for all available films is being provided which will really be a library of films, and, will function in regard to films as a library functions with its books and reading matter. It is the endeavor of the University of Minnesota to collect and save for the use of posterity films which normally are destroyed but which foresight speculates will have historical and research value in the future.





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in

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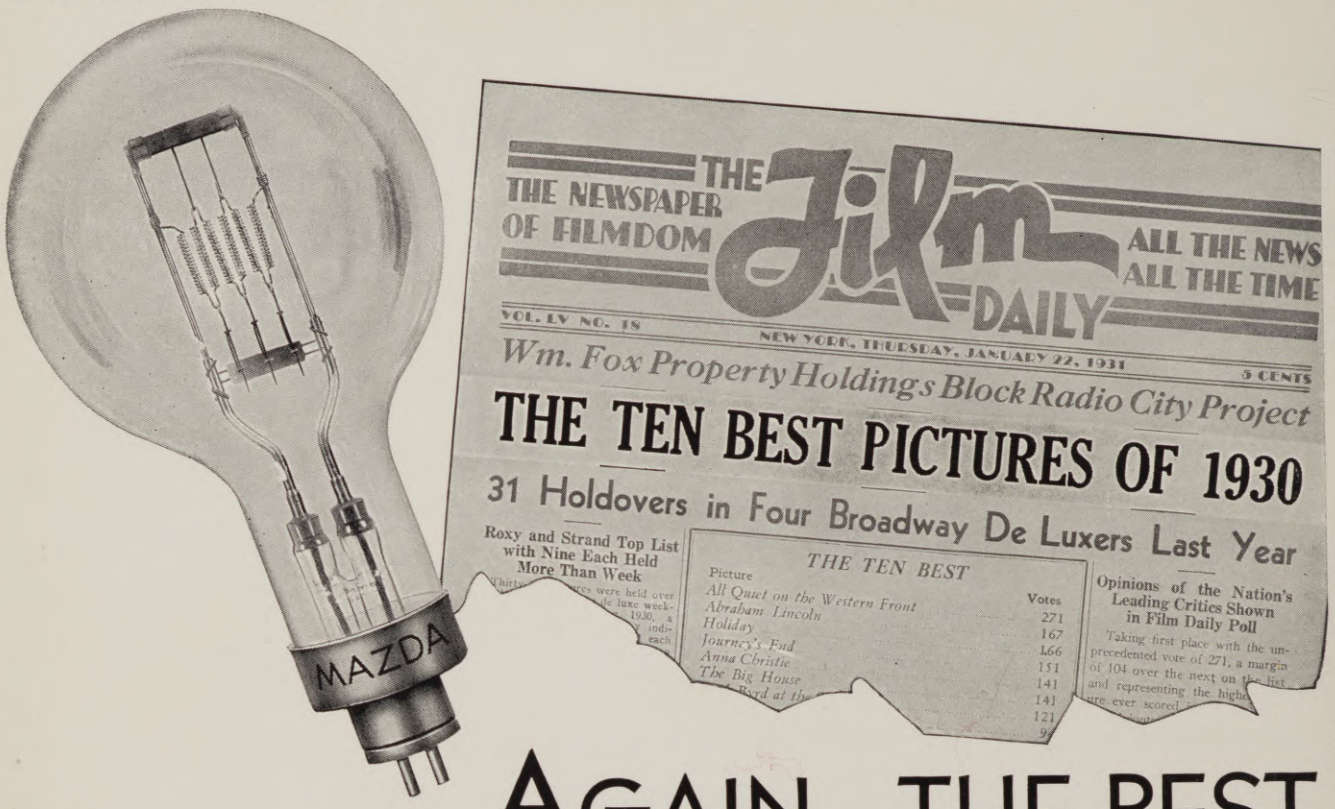
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This predominance of MAZDA lamps for lighting as well as for recording and reproduction of sound is significant. Of the ten best pictures, seven used MAZDA lamps exclusively, while two of the others used MAZDA lamps in part.

Every type of General Electric MAZDA lamp used in motion picture photography is the result of millions of dollars and many years spent in research and test applications. That MAZDA lamps should contribute to the outstanding success of the year's best pictures is not only logical—it is inevitable because the past achievement, present acceptance and future promise of MAZDA lamps have made them indispensable to the cinematographer.

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Erpi Consolidates Forces

CONSOLIDATION of all field forces of Electrical Research Products is under way, according to a statement issued by H. M. Wilcox, Vice President in charge of operation. The first step in the merging of departments was effected February 1 when the Installation and Service Departments were consolidated.

"The increasing variety of activities which the Installation and Service Departments are being called upon to handle has made it desirable in the interest of greater flexibility to consolidate the field forces and to rearrange territories so that the sales, credit and operating divisions will synchronize, thereby effecting an even closer coordination," stated Wilcox.

In the consolidation of Service and Installation, the two departments become the Operating Department with J. S. Ward, formerly Service Manager, appointed Director of Operations, reporting to Wilcox; and L. W. Conrow, formerly Installation Manager, becomes Operating Manager, reporting to Ward.

The four Installation Divisions and thirteen Service Divisions will be consolidated into five Operating Divisions each under the administration of a manager, who will be completely responsible for both installation and service activities.

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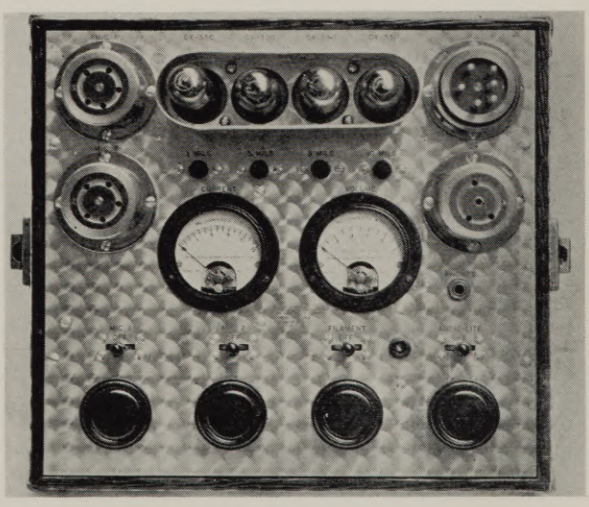
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LABORATORY *and* TECHNICAL MATTERS

by **EMERY HUSE, A. S. C.**

For a long time we have felt that a special department devoted to laboratory and other technical problems would be a feature that would be welcomed by the readers of this magazine. Starting with this issue we are pleased to announce that such a department is now at your disposal, and is conducted by Mr. Emery Huse, A. S. C., technical editor of the American Cinematographer. Mr. Huse, whose picture appears at the left, needs no introduction, for his work with the Eastman Kodak Company has stamped him as a recognized authority. If you have any problems, send them into this department and they will be answered. —The Editor.

Screen Brightness

THE QUESTION of screen brightness has arisen on many occasions but there seems to be very little definite data available as to what brightness should be maintained on motion picture screens. A review of the literature failed to show any definite recommendation of specific brightness values for motion picture films but it may be inferred from the experimental data in various articles published that an optimum value of screen brightness about eight years ago was 10 foot-candles. During the past year the Academy of Motion Picture Arts and Sciences has had a committee in operation called the Screen Illumination Committee, whose purpose it was to study screen brightness. The Society of Motion Picture Engineers for years had had a Theatre Lighting Committee, part of whose work was a study of the screen brightness subject.

There are occasions arising where a picture shown in two different projection rooms, or theatres, will look quite different on the screen. Reference is made particularly to the same print. Oftentimes as a result of the difference, blame is placed on the projectionist or on the laboratory for their print quality. In most instances the cause of this difficulty can be centered in the inequality of the brightness of the screens on which the picture is viewed.

This general problem of screen brightness is of great magnitude and extends from the processing laboratory through the studio projection rooms to the screens of the multitude of theatres throughout the country. It is naturally quite impossible at this time to make a standard condition which would please all parties concerned but it does seem that at least within a given studio the various projection rooms could be maintained at some definite screen brightness. Furthermore, in making a study of various theatres and studios relative to their screen brightness the values are not greatly in disagreement but they are sufficiently so to make standardization impossible. Theatres agree among themselves fairly well, but the studios are not as good in this respect.

The purpose of this article is simply to bring to the attention of those interested a tabulation of some of the data available at the present moment, which data was accumulated during the past year. The accompanying table gives rather completely such data.

Color Coefficient

THE SENSITOMETRIC term "color coefficient" has been brought into the motion picture vocabulary since the introduction of sound photography. An attempt will be made here to briefly explain its significance.

Screen Illumination Data For Several Los Angeles Theatres

THEATRE	TYPE	LENGTH OF THROW	TYPE OF SCREEN	SIZE OF SCREEN	SCREEN ILLUMINATION FOOT-CANDLES
A	Neighborhood	100 ft.	Transvox	13' 2" x 17' 8"	8.5 f. c.
B	"	99 ft.	"	13' 2" x 17' 8"	10 f. c.
C	L. A. Class A House	100 ft.	Datone X	14' 3" x 19'	10.5 f. c.
D	Hollywood Class A	95 ft.	Transvox	18' 6" x 24' 7"	11 f. c.
E	Hollywood Class A	75 ft.	"	14' 6" x 19' 4"	12 f. c.
F	Neighborhood	125 ft.	"	13' x 17' 5"	9 f. c.
G	Laboratory	65 ft.	Datone X	Exact dimension unknown	12 f. c.
H	"	35 ft.	Not sound screen	" " "	24 f. c.
I	"	45 ft.	Datone X	10 x 12	17 f. c.
J	"	35 ft.	Not sound screen matte surface	7 x 9½	38 f. c.

The color of the silver deposit in a photographic negative exerts a marked influence on the quality of the resulting print, thus negatives made with certain developers exhibit decidedly yellowish deposits, while other developers produce images that are almost entirely colorless. Of two such negatives having the same visual quality, except for the differences in color, the yellowish one will produce a print of higher contrast. The reason for this can be determined only upon a consideration of the difference between the visibility function of the eye and the spectral sensitivity of the photographic printing material. A deposit which is yellowish, therefore, will have a lower total transmission when measured by using some photographic material, such as positive film, as the receiving surface for the transmitted radiation, than when measured by a visual method in which the retina of the eye is employed, as the lighter sensitive receptor. It is quite evident, then, that in the study of the negative a careful distinction must be made between the total visual transmission and the total photographic transmission of the silver deposits which compose that negative. Color coefficient may be defined as the factor by which the visual contrast in a negative is increased in the print due to the color of the negative silver deposits. If the negative deposits are neutral in color then the color coefficient is unity.

In studying various developers it has been found that a pure elon developer, one containing no hydroquinone, gives the clearest image. The color coefficient of a pure elon developer approximates 1.03 to 1.05, showing an increase in gamma of from three to five percent over a negative with colorless deposits of silver.

Developers of the type used in the processing of sound film show color coefficients in the neighborhood of 1.10 to 1.20, the actual value depending upon the construction of the developer and the manner in which the film is processed in it.

For developers of the pyro type in which a definitely stained image is obtained, color coefficients of the order of 1.30 to 1.40 are quite usual.

In the discussion of color coefficient the word "color" may be a little misleading. Unless the negative has a decided color very little color will be observed when that negative is inspected visually.

●

Series and Parallel

DRY CELLS used in battery sets illustrate series and parallel connections nicely. Dry cells are used to light the filaments of dry cell type radio sets. With tubes like the 199, three dry cells in series are required. The voltage is then tripled (each cell is 1½ volts). The current capacity of the cell remains the same as that of one cell, however. For other tubes, such as the WD11, only 1½ volts are required, but one cell does not have enough current capacity to light all the tubes of the set. Therefore a number of dry cells, any number desired, is connected in parallel, that is, with their positive terminals joined together, and their negative terminals joined together. This acts as a single dry cell, still of 1½ volts, but of greater current capacity.

●

Models of Sets Prove Most Efficient Method

PARAMOUNT'S New York studio has inaugurated a policy of making models of sets, drawn to ½ inch scale, which are used in preference to sketches. By means of these models, the director can visualize the entire action before the picture goes into production and may plan his picture accordingly. Cameramen, electricians and carpenters also benefit by studying the models in figuring out camera angles, lighting effects and anticipating difficulties in construction. The plan, now in effect under the supervision of William Saulter, Paramount's head art director here, has proven a great saving in both time and money.

High Speed Camera Analysis of Energy Expenditure

THE AVERAGE college sprinter in the 100-yard dash utilizes oxygen at a rate which is equivalent to the production of 13 H.P., according to the results of physiologists who have been studying the problem. With the aid of the high speed motion picture camera, an analysis has recently been made of the actual mechanical work done by these runners, who were picked at random from the gymnasium classes of the university.

From this investigation it was found that only about 3 H.P. are returned as mechanical work which could be accounted for by the movements of the various parts of the body. This makes the human machine only 23 per cent efficient.

By measuring the displacements of the body structures as they appeared when projected on a screen from over 2,000 separate film pictures, it has been possible to compute the velocities of the arms and legs during their wings. The results showed that more than half of the mechanical work was required to swing them and that 0.7 H.P. was expended to stop them at the end of the swing, making a total of 2.4 H. P. utilized in the arms and legs. The overcoming of the resistance of the feet making contact with the ground required 0.4 H.P., while wind pressure and gravity accounted for 0.2 H.P.

●

Bausch & Lomb Design Lens for Wide Screen

BAUSCH & LOMB OPTICAL CO., Rochester, N. Y., is now marketing its new super cinephor lens and condenser system, said to have been especially designed to meet the requirements of the wide screen, as well as to improve standard films. This is the first projection lens to be fully corrected for astigmatism, the company claims, hence the improved flat field and critical definition.

The condenser on its operation confines the light to an evenly illuminated oval of the same proportion as the wide film aperture dimensions, giving 50 per cent more illumination, the company states.

●

More Color

IT IS reported that a limited liability company with a capital of 3,500,000 francs has just been formed in Paris for the production of colored film. The name of the concern in question is Societe Continentale Europeenne Cinecolor. The board of directors is composed of Louis Aubert, Marcel Monteux, Leopold-Maurice Gratioulet and Gustave Dyckhoff. The new company is to exploit the so-called Thornton color process, the patent of which is held by John Edward Thornton, of Jersey, England.

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Amateur Movie Making

by HAL HALL

WE HAD hoped that Mr. Stull, who conducts this department, would be well and back at his desk in time to write for the March issue. However, such is not the case. Just as he began to feel somewhat like his old self he was stricken with appendicitis. At this writing he is on the road to recovery and asks us to send his best wishes to those who read his department each month. So, you will have to bear with me for another issue.

At this particular season of the year, between winter and spring, many amateurs feel that there is little chance to use their 16 millimeter camera. They look through watery windows at the driving rains, at the cloudy skies or the bleak landscape. Then they long for the sunny days that are to come. Few realize that they are passing up the opportunity of making subjects that are unique and really worthwhile.

There is nothing more interesting than a subject photographed in the rain. With the fast lenses of today, dark days are not what they once were to the photographer. In fact, untold possibilities are revealed, and from an artistic point of view the amateur may make a screen picture of much greater pictorial interest than in the summer days when the sun is blazing down and not a cloud is in the sky. The great banks of drifting clouds alone furnish pictorial attractiveness that one should not fail to take advantage of. Dark clouds, dripping rain, unusual reflections on wet pavements, distant landscapes veiled with a moody mistiness, light coming from a flatter angle, making it possible to secure artistic effects closer to the middle of the day than you can a month later—all aid the amateur in making pictures that will be little jewels in his collection.

An interesting series of pictures for a serious amateur may be made during the four seasons of the year. Select a spot that lends itself to pictorial beauty. Photograph it in the middle of winter when the ice and snow covers all. As spring arrives with budding leaves and drenching rain, photograph it again. And then when summer is here and the entire scene has changed, photograph it in kodacolor. As the climax, again in kodacolor, photograph it in the autumn when it is bathed in the gorgeous colors of that season. If well thought out and intelligently photographed, you will have a picture you will be proud of, and which will challenge your cinematographic ability.

While on the subject of rainy day photography, this writer has often wondered why the general run of amateurs puts the camera away on a rainy day. He may be making a trip around the world, and recording it on his film. But—if it rains when he is in Boston he usually makes no pictures. Why not? It seems to this writer that what you want is a photographic record of the trip. Why not make it in the rain if it is raining? Those may be the best pictures of the lot. A friend of mine recently showed me some pictures he had made while on a trip to Alaska. It rained a large part of the time he was there, and—the best pictures he had were those made on the rainy days. There was a certain air of mystery about the mountains with the mist and clouds that fairly made one gasp with delight. Why not try it?

Filters

The subject of filters seems to be a fly in the ointment to many amateurs, judging from the number of questions that reach this office. Many ask why they should use filters. Many ask how to use them.

In the first place, color-filters are a means of correcting the discrepancies between the way the film sees colors, and the way our eyes see them. That is, the film sees colors according to one scale of brightness, and our eyes see the same colors with quite different degrees of brightness. If we arrange a strip of cardboard painted blue-violet at one end, and graduating through the entire spectrum to red at the other end, with yellow approximately at the middle, our eyes will register the middle section as being the brightest, with both ends shading off deeper and deeper. But if we photograph this same colored strip, we will have proof that the film sees color very differently from the way we do, for our picture will be brightest at the blue end, and then shade down to an almost dead black in the red section. This is because the blue light (and, beyond it, the invisible ultra-violet) is the most active photographically, while the red is almost inert. Therefore, if we want to get anything like a true rendition of the color-values our eyes see, we must in some way hold back a portion of the powerful blue rays, and give the weaker greens, yellows, and reds a chance to make their impressions upon the film. That is what light-filters are for. The better grades are so made that they not only retard the blue rays, but quite absorb the invisible ultraviolet frequencies. But, in order to work under all conditions, we must have a variety of filters: some that hold back only a little of the blue, and some that hold back a great deal of it. Therefore filters are made in several grades, the light-colored ones holding back only a moderate part of the blue, while the darker ones retard more and more of it. However, no commercial filters hold back all of the blue rays, for that would be as serious an exaggeration in its way as the original condition the filter is intended to correct is.

Now, when these filters are used, it will be seen that they are removing a portion of the light (and the most active portion, at that), but they are not adding anything to take its place. Therefore, in order to keep the exposure correct, a longer time must be given, or a larger amount of light allowed to work on the plate: and this increase must be directly proportioned to the amount of blue light cut out by the filter. In amateur movie work, where the time of exposure is usually fixed, this compensation must be made by opening the diaphragm on the lens. In order to make this compensation accurately and conveniently, the manufacturers have determined what is known as the "filter factor" for each of their various filters. There are so many different makes of filters on the market today that it would be impossible to give here the factors of anything like a comprehensive number of them; however, among the most popular ones are the "Wratten" K series made by the Eastman Company, and of these the ones most used in amateur movie-making are the K 1, the K 1½, and the K 2. The lightest of these, the K 1, absorbs 60% of the blue rays, and passes nearly 80% of all the others; its

(Continued on Page 35)



THE PICTORIALIST by **FRANK TANNER**

Going To Try Directing?

An Amateur Advises Amateurs

by **ORLTON WEST**

We are more than delighted to give you the accompanying article by Mr. Orlton West, because he is one of the best known amateurs in Great Britain. He has directed many fine amateur films, with "Waitress" as, perhaps, the most outstanding. This was made for the London Film Guild. —The Editor.

"I'M GOING to have a shot at directing my first film this spring," a friend announces.

"How do you do it?"

"It's quite impossible to explain **how** one does these things," I informed him, but I passed on to him, and now, in this article, pass on to you, the unripe fruits of a brief experience in the matter.

The more one watches other amateur film directors at work the more one realizes successful results to be due more to science than to art, more to deliberate study and application of psychology than to a black hat and the 'artistic' temperament.

Generally speaking there are two distinct types of directors common both to the amateur and commercial film studio; the one, noisy, driving, 'schoolmasterish;' the other, quiet, calm, and self possessed.

The former cannot hope to obtain useful results from his ravings, because as soon as he gets annoyed and behaves like a spoilt uncontrolled child, one or other of the players follow suit, either privately to themselves or openly to everyone. In either case concentration on the real work in hand goes to the winds. Noisy argument breaks up order, and the resulting atmosphere of strain muddles the acting side of matters.

On the other hand the quiet director, although his presence may be scarcely noticed by lookers-on, dominates and guides his players with his **personality.** They trust him most when he says least—and is thinking. The few necessary words he does utter carry weight.

Robots and Actors

Always prepare your cast for direction with an outline explanation of the scenes to be 'shot', then go on to tell them anything they might want to know (especially if they do not ask) about the scenario in order according to the **story,** not according to your working script which is intelligible only to technicians.

This is important, because the players can only generate correct degrees of expression for present scenes if they know how they match up with past and future ones. There is never any excuse for treating any member of the cast merely as a robot performing to your orders.

Some people I find do much better without detailed direction. Really good players (and there are some—if you look for them) are best left to themselves. Once they know the general situation, atmosphere, and points to be conveyed in the scenes on hand, they will direct themselves naturally. Many members of the cast will listen intently to every word you have to say. They belong to a different type, who feel the 'teacher-child' or 'you know everything, I know nothing' attitude towards you. They project their personalities upon you as representing the part they are about to act, and your detailed directions give them self confidence. To successfully handle these folk form the real test of your directorial abilities.

The amateur film director must train himself to be very versatile. When working on exciting scenes such as fights or love quarrels, fold up your quiet manner for a time and put it away. Try and work yourself into an appropriate emotional passion, some of which will be transmitted to those under your direction

Alternatively, when engaged on a quiet domestic scene, switch back to the calm ludo (**not** Lido) mood at 9 p. m.—in short, have control of yourself before hoping for control of other people. Incidentally, it is wise to free the studio from all those not directly engaged in production while guiding difficult pieces of acting. Continuous gaze, whispered criticisms, and a general atmosphere of petty jealousy created by other and less fortunate members of the club may worry your players—and the finished results too!

Overcoming Shyness

Competent casting lightens the directors' job, and is essential if you are going to give the whole film and its best players an honest chance. If you want lovers try and find a couple who are real lovers, or at any rate who can get on quite well together. This omits the preliminary overcoming of little repressions, and shynesses, which you may find most trying.

It is in this matter of casting where the amateur has advantages over the commercial director, who is often tied to a 'star' who may be a mother in one film and a daughter in the next—one of these parts must be miles removed from that star's real personality and outlook—poor 'stars.'

Look carefully around your club for the desired type for a particular character. If unlucky, it is sometimes better to seek outside the club circle and import a new member than to accept second best. Small part players may be chosen from almost anywhere, and while giving priority to club members, I have chosen ideal minor parts from passers-by in the street, and these people, because they were perfectly naturally themselves assisted the chief players by forming living backgrounds to their performances.

Some people become nervous outside the studio. They dislike a street crowd of lookers-on who stare at them, just as they would at a fire, cat, burglar, or male dress reformer! The best way out of this difficulty is to rehearse the scene against the correct background, while the passers-by gape to their heart's content, then go for a brief circular walking tour, and return to shoot the scene before the inquisitive ones have time to collect and exert their fatal hypnotism. In preparing or assisting to prepare the scenario, you can aid both yourself and your players by always giving them something, some symbol to act to.

It is unfair to stand the villain against a wall and say, "Now look as though you felt lustful—remember you are supposed to be thinking about bad girls." He will, unless he be a very good actor, find it as difficult as trying to catch the seaside holiday spirit at the Public Baths on a Sunday morning. Should the 'bad girl' not be in the same shot, he can at least be looking at a photograph, poster, or something suggestive of her, which incidentally, visually indicates his thoughts to the audience. There are the actors, the audience, and the film as a whole to be considered—all along.

The Man on the Cover

An Intimate Glimpse of a Professional Amateur

by **JOHN PARKER**

HE PORTRAYS perfect gentlemen in pictures—but in real life he is a rough and ready outdoors sportsman. He was born in London and educated in the conservative halls of an English university—but he prefers ranching in the wild and woolly American west to the life of an actor or cosmopolite.

He was noted as one of the finest young actors on the London and New York stages—but he likes California so much that he has been a permanent resident ever since his arrival five years ago.

He first came to Hollywood to play one of the featured roles in "Beau Geste," and recently he portrayed the title role in the sequel, "Beau Ideal."

He is married to one of the most celebrated actresses in the world, Ruth Chatterton—but he is also a star in his own right.

He is one of the finest hunters, fisherman, all-around sportsman and amateur photographers we know.

He is the man on the cover.

His name is Ralph Forbes.

And, just to prove to you that he is a really clever amateur photographer, we now inform you that he made the unusually striking picture of himself on the cover this month himself, using an automatic device to work the camera.

No more fitting picture of "the other side" of this man could be revealed than this cover. Fated by birth, breeding and education to portray the character of the perfect gentleman in pictures and on the stage, Forbes presents the most amazing anomaly in Hollywood. To the picture world and the theatregoers, he is the beau ideal, the Chesterfield, the epitome of gentility. While he undoubtedly possesses all of these blue-blooded attributes, there is another side to his real character which is known only to his few intimates. The picture on the cover, made in the high Sierras, gives us the real Forbes.

Here is one of the least-known actors in the public eye. How many people, even in his own profession, know that Forbes enjoys every vacation between pictures hidden far off from civilization in the wilds of the high Sierras, hunting and fishing and photographing? He is one of those rare humans, of this effete world, who honestly gets his biggest kick out of life in roughing it. Packing in over the back trails to some choice and secret spot to both photograph and hunt wild game, enduring whatever hardships come with the fun—this is Forbes' idea of the proper life for a man. Give him a gun, rod, camera, pipe, horse and dog, and strange as it may seem to those who follow his screen roles, he is far more at home than he is in the drawing room. In his private opinion, the only place for the drawing room is the screen or stage.

In his study and workshop, amid his collection of guns, rods, tackle, trail maps, trophies, cameras, complete sports equipment and an amazing array of surgical and medical "first-aids," I found him one of the most "different" of actors.

"I was educated as a lawyer, and later trained as an actor," said Forbes, "but I would have preferred being a doctor. That is, providing I could have been a good one. To my way of thinking, physicians and surgeons do more good for the human race than any class of scientists."

"See this instrument. I had to perform a minor operation on one of my guides while on a hunting trip, to save him from possible effects of a serious injury. You see, I have always had the natural bent."

This chap is full of such surprises.

"I have no desire to live in New York or London," he frankly admitted. "Yes, I was born in London and I love my native England, but I much prefer to live in California. Not this California, penned in close city quarters between the mountains and the sea, but in the real California where the old west is still unspoiled by civilization. Not very far from here, in fact less than a hundred miles, I could show you a large ranch where the west is still the west. There are many such places back in the Sierras, and I am now negotiating the purchase of a thousand-acre ranch where I can enjoy life to the utmost. Being monarch of all you survey, isn't a bad idea, is it? My profession is acting, but for pleasure give me ranching. Nothing will suit me better than to be able to run cattle on the place and to stock it with a few fine horses. Outside of the stock and new quarters, it will remain just as it is—the primitive."

Forbes is that type of English sportsman who was born to the outdoors, horses, guns and dogs. He could never be happy without this life. He has found it in southern California.

In my opinion, "Beau Ideal" fell short of "Beau Geste" as a story and picture. However, Forbes said he welcomed the opportunity to change his evening clothes for the rough prison garb and colorful Foreign Legion uniform He even grew a beard for the prison sequence. He won praise from the critics for his fine characterization, even if the picture proved a bit disappointing.

"Talking pictures?" he smiled at the usual query. "Although I shall never cease to be grateful for the opportunity the movies gave me five years ago, I must say that the talking picture has progressed more in two years than the silents did in ten. All one has to do to fully realize the tremendous advantages of the new form over the old, is to see Ronnie Colman in 'The Devil To Pay', and to hear Frederick Lonsdale's priceless lines."

In 1923 Forbes was recognized as one of London's most promising young actors. He came to New York to appear in a war play, 'Havoc.' He never returned. Here he met Ruth Chatterton in 1924, and they were married after a whirlwind courtship. Before coming to Hollywood he appeared in three plays, which led to Herbert Brenon selecting him for one of the three Geste brothers, along with Ronald Colman and Neil Hamilton. Local theatregoers have had fine examples of his stage ability. He appeared opposite his wife, Ruth Chatterton, in Michael Arlen's 'Green Hat,' and with Edward Everett Horton, Lois Wilson and his mother, Mary Forbes, in 'The Swan'.

Interesting people always present strange contrasts. This stalwart, blonde, blue-eyed young Englishman may be fated to continue playing drawing-room roles in pictures. But, after seeing the other side of the man, one can't help wishing that fate will soon bestow upon him a rough and ready role into which he can sink his dramatic teeth.

When You Take Your Movie Camera Abroad

MORE and more, travelers are taking amateur movie cameras with them when they fare abroad. They are doing this because they find that these little instruments enable them to capture foreign life in action—just as it is lived. And when they return to their homes, they have only to throw their movies on the screen to relive the joys of their travels over and over again.

Because of the increasing vogue of travel movie making, we are sure that it will be found worth while to make a few practical suggestions as to taking camera and film to foreign countries.

With regard to the camera itself, special precautions are necessary in taking care of the lens, because moisture is very apt to condense upon it, leaving a slight deposit which will interfere with the possibility of good results. This seems an unimportant point, but a dirty lens can spoil many dollars worth of film. One firm manufactures a special lens cleaning outfit, the price being nominal. Other than the matter of keeping the lens clean, no special precautions as to the care of the camera are necessary beyond the actual instructions issued with every instrument sold, except to avoid getting sand, dust or water in the mechanism.

Film can be bought in this country and taken abroad; in fact, it is generally cheaper to do so because the price in the various foreign countries is usually the same as in the United States plus an import duty.

However, films can be purchased at almost any of many photographic supply houses abroad, and development of their particular make of reversal film is undertaken without additional cost at numerous laboratories maintained in foreign countries by film manufacturers. All film is adequately packed for normal use but, if a prolonged stay in a tropical area is anticipated, film should be purchased in special export packing for which there is a slight additional charge.

At the present time there is a duty on amateur motion picture film and equipment entering certain foreign countries which, in the case of travelers making a record of their tours, is not often enforced. The experience of the great majority is that a small supply of film for personal use, together with their cameras, is admitted practically everywhere without restriction.

In some countries the traveler is occasionally required to deposit an amount on the movie camera and film approximately equal to the import duty. This amount is refunded if the material is taken out within a specified time, usually six months.

The United States Tariff Act of 1930, now a law, provides that motion picture film exposed abroad, whether developed or not, if of American manufacture and if not to be used for commercial purposes, may be brought into the United States duty free. This free entry may be made into the United States possessions overseas as well as the mainland, with the exceptions of the Philippine Islands, the Virgin Islands, American Samoa and the Island of Guam.

Before leaving this country on a trip abroad, it is especially suggested by the Bell & Howell Company that you register your camera, lenses, film, etc., with the customs office at the port of departure, using Form No. 4455. This will save all argument as to American origin when you return.

After you have replaced your exposed film in the round black metal case which is furnished with all 16 mm. film, place the case in your paper carton or metal sealing case but do not reseal. If you wrap the entire package in several layers of ordinary newspaper it will help wonderfully in preventing deterioration from moisture.

It is recommended that all travelers have an occasional roll of film processed abroad if possible, so as to afford an opportunity of checking their results. If you have film processed abroad, it is advisable to avoid mailing it across international borders, as delays and difficulties invariably occur. Many travelers prefer to bring most of their film home with them to have it processed at a domestic laboratory with whose work they are familiar. NOTE: At the date of writing, all film processed in Italy must be censored in Rome before leaving the country. This is a long procedure and should be avoided if possible by having film processed after leaving Italy.

The experience of the majority of travelers is that no trouble or restrictions are encountered by travelers.

The laws evidently are not intended to operate against the amateur; therefore, film is generally admitted free providing it is carried in the owner's personal baggage.

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Another Milestone

COMPLETING a quarter century in motion pictures Carl Laemmle, president, Universal Pictures, reviewed not the kaleidoscopic development of the industry but turned his thoughts to 25 years hence picturing advancement rivalling the imagination of Jules Verne.

Outstanding film pioneer and the only independent producer and distributor remaining in the industry, Laemmle believes the great major changes in film entertainment that have occurred in recent years are nothing compared to those to come before 1956.

"In 1906 automobiles were running on rubber and gasoline and they will do the same in 1956 but motion pictures are revolutionized every few years and the changes to come will dwarf all of the recent marvels of our progress.

"25 years from now motion picture theatres will present pictures direct from the studios by television; news weekly films will be sent by television. Hence a shipwreck in the China sea will be broadcast to all the world within a few hours after it is photographed. I think the motion picture is now one of our greatest educational factors and within a few years school houses will be equipped with television sets which will permit famous educators, surgeons, musicians and lecturers to make a motion picture and then have it broadcast to the world while they themselves take up other work.

"We are living in an age of miracles and the imaginary developments of today will be actualities to our children. I took up motion picture work because it was fascinating. I have found the service of my pictures to the public a tonic which gives me pride, courage and youth. Old? I'll never grow old so long as my company can entertain the world and I know that I am bringing enjoyment, enlightenment, encouragement and happiness to millions of people in all walks of life."

In a recent presentation of a golden scroll in behalf of the entire film industry, Will H. Hays, film czar, stated "Mr. Laemmle's career is the history of motion pictures."

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Fast Service

THE TWENTIETH Century combination of ERPI Service and Airplane Travel again saved a show, the theatre involved in the most recent incident being the Plaza, Great Bend, where trouble developed at three o'clock in the afternoon.

The manager located R. S. Murphy, ERPI service engineer by telephone at the Tucker Theatre, Liberal, Kansas. A quick airplane trip got the engineer at Great Bend by six o'clock.

As the result of a long distance telephone call an amplifier had been shipped to the theatre from Kansas City and was waiting when the service engineer arrived, but proved to be unnecessary.

The trouble was diagnosed as a short circuit in the condenser and was remedied by the substitution of a temporary plate from the B battery by 7:25, in time for the evening show to go on. After the performance was over a complete bank of new condensers was substituted.

Screen Definition

(Continued from Page 15)

Moore filter No. 1 (No. 64 and 27) is recommended when as an example a sunset over water is photographed, reducing sun to a definite disc, but maintaining characteristic details and contrasts on water reflections.

This is the densest combination filter of the series of six published in a previous issue.



Fig. 4



Fig. 5

It is unfortunate that the selection of proper filters or filter combinations for especially desired effects is in each instance a delicate problem, the solution of which so greatly influences final screen definition.

The great number of conditions, above cited, call for careful consideration of their relative values and no set rule can be given for correct filter use.

The chart Fig. 1, however, offers certain assistance for these problems and has been found of reliable value.

It is, however, of prime importance to always keep in mind that any filter—1, invariably reduces lens speed and 2, that it increases the actinic reaction for its complementary color value but only relative and never absolute.

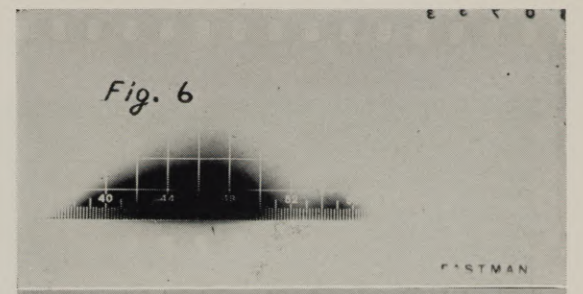
In the next article a complete list of 20 Moore filters with their approximate multiplication factors and their individual characteristics will be published as a valuable guide for filter work.

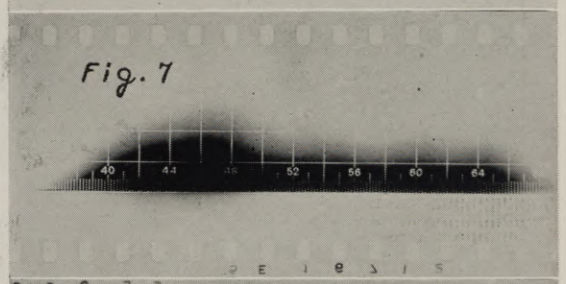
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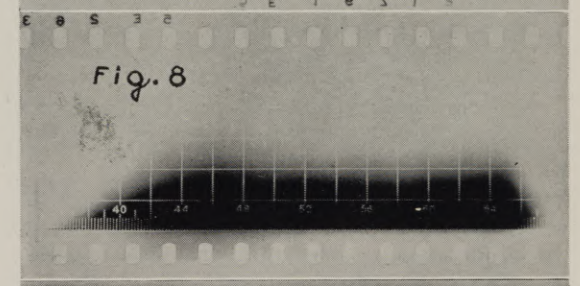
Amateur Movie Making

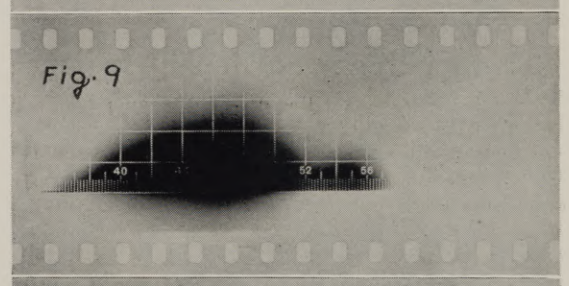
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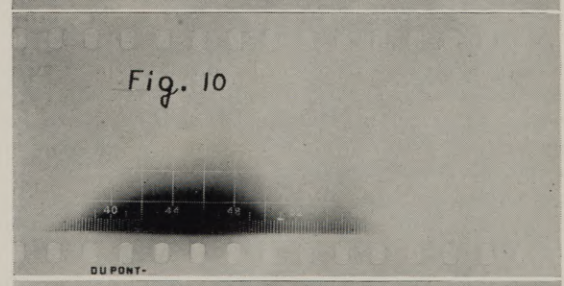
"filter factor" is 1.5. That is, when using a K 1, the normal exposure must be multiplied by 1.5. With the K 1½, the factor is 2; and with the K 2, it is 3. Therefore, in practical use, with a K 1 the diaphragm opening should be increased half a stop; with a K 1½, a full stop; and with a K 2, a stop and a half. In other words, if a scene required f:8 as a normal, unfiltered exposure, it would require f:6.3 if a K 1 filter were used, f:5.6 with a K 1½, and f:4.5 with a K 2; all of which is a powerful argument in favor of the use of large-aperture lenses.

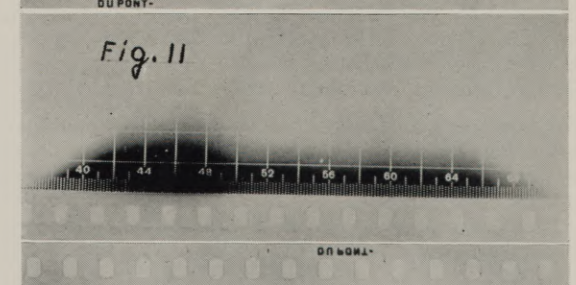


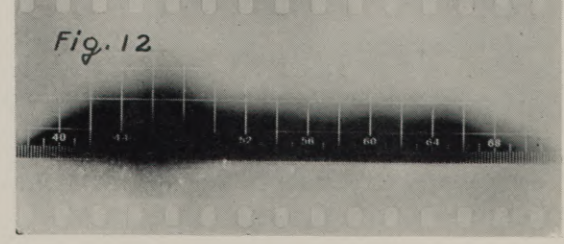












Cluck, Cluck



IF STUDIO picture makers think that stars are temperamental and difficult to handle, they should try their skill on a bunch of hens, says C. L. Venard, famous maker of Farm Films, of Peoria, Illinois. Mr. Venard sends the above picture along to show the studio workers just what the boys outside are doing.

New Filmo Educational Booklet

EVERYONE interested in the use of motion pictures in the educational field will want to read the new booklet, "Filmo Motion Pictures in Visual Education," just issued by the Bell & Howell Company.

Among the many important subjects treated is that of the use of sound movies in education. Sound is bound to come; as a matter of fact it is here now. This booklet tells how the sound picture can be profitably and economically introduced into actual every-day use in school and college.

"Finding Films for School Use" is the title of an especially valuable section of the booklet. Teaching films are as necessary to modern education as textbooks and wall maps, and helpful suggestions are given as to how to secure a worthwhile supply of educational films.

How schools can make their own movies is another extremely vital topic that is interestingly discussed, as is also the important subject of how to care for 16 mm. films.

A section entitled "Pointers for Projectionists" is sure to be of tremendous usefulness. Included in this section is a valuable table showing picture sizes obtainable on the screen by Filmo projection lenses of different focal lengths.

The booklet is rendered particularly timely due to the fact that it carries the news of the recent development of the powerful 75 volt 375 watt lamp for 16 mm. projection—a lamp which, by making possible the entirely adequate projection of 16 mm. black and white film to a width of 12 feet, opens up a tremendous new field for the amateur size film in school and college.

A list of typical installations of Filmo equipment is Universities and Colleges, High Schools, Public Grade Schools, Private and Parochial Schools, and Associations of educational significance, is notably impressive.

Copies of the booklet can be had free on request to the Bell & Howell Company, Educatonal Department, 1801 Larchmont Avenue, Chicago.

Paramount Color

A NEW three-color additive process, which it is reported Paramount will have ready for general use in about one year, costs only approximately 1½ cents a foot more than black and white, it is understood. In other words, total cost is 4½ cents a foot, as compared with present color costs of 8½ cents a foot and up.

Laboratory work on the process is practically completed. The job now facing the company is that of designing machinery to standardize the quality of prints. Prints used are in black and white. Color is transferred to the screen through the addition of a filter in front of the projector lense. The projector can be operated at normal speed.

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Filmo Topics

JUDGING from advance information, the March issue of Filmo Topics, the excellent publication of the Bell & Howell Company, should prove of real interest to all users of 16 mm. equipment. A copy will be mailed free to anyone who sends his request to Bell & Howell Company, 1801 Larchmont Ave., Chicago, Ill. The contents list follows:

Filmo Joins the Army. How motion pictures helped keep Battery "A," 15th Coast Artillery, in the "excellent" class. By Capt. A. C. Cleveland, Coast Artillery Corps, U. S. Army.

Composition in Motion Pictures. Some simple artistic principles which you'll do well to apply whenever you sally forth with your Filmo.

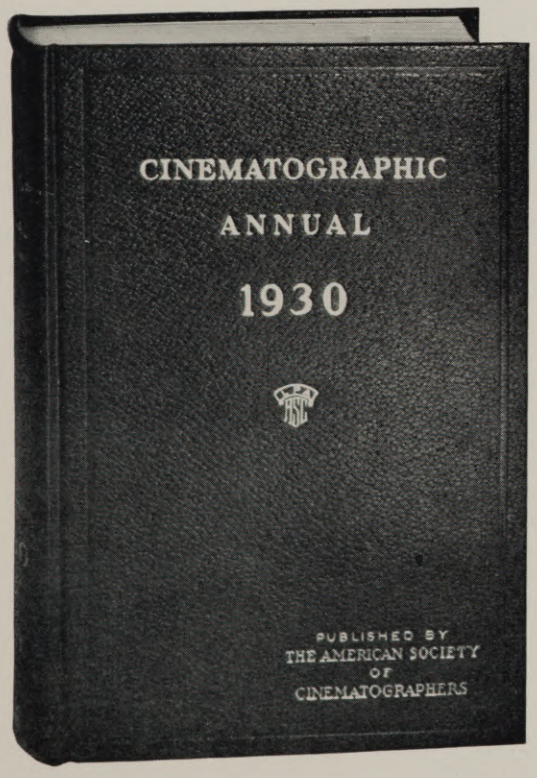
A Naturalist "Goes Filmo" . . . and produces motion pictures of bird life which are employed in Audubon Society educational work.

Filmo News Pictorial. News photo and captions.

Titling Your Films. No. 6. A pot-pourri of novel title ideas used and contributed by Filmo owners.

"Facts About Filmo." Article No. 15, dealing with the optical system of the Filmo Projector. By J. A. Dubray.

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Lacos Light "Cimarron"



AN ASSEMBLAGE of Laco incandescent lighting equipment which represented one of the largest batteries of lights ever to be used, recently was employed by Radio Pictures at the premiere of "Cimarron" at Orpheum theatre.

It was a case of turning the proverbial "night into day," so effective was the lighting. Scores of folks from back east, eager to glimpse the "stars," had little difficulty from vantage points half a block away in distinguishing one player from another. Chief Electrician William Johnson of Radio Pictures, together with his staff of able technicians, are to be congratulated upon their ability to introduce something effective in modern outdoor illumination.

Tanar Corporation Announces New Portable Double Sound-on-Film Recorder

A NEW portable Double Sound-on-Film Recorder has just been announced by the Tanar Corporation of Hollywood, makers of the Tanar single system portable recorders. Many months of experiment were devoted to this system before Mr. Len H. Roos, vice-president and general manager of the company, gave it his approval. But now, he says, this unit is mechanically perfect.

The new Tanar Portable Double Sound-on-Film Recorder is very light, compact and mounted complete, similar to the battery case in the regular Tanar Portable Single System.

The Double System makes use of the same amplifier and battery supply as the Single System and the recorder itself takes standard Bell & Howell magazines of either four hundred or one thousand feet. Mechanical movement of the recorder is properly dampened and filtered so that perfect mechanical motion is received on the film.

Recording is done on positive stock with the standard Tanar Light, and the slit block is interchangeable with the rails in the camera of the Single System. This means that owners of Tanar Single System may purchase the extra case with the recorder and control panel, slip the block out of their camera and push it in place in the double recorder which will give them the equivalent of two outfits.

All castings are made of an aluminum alloy which is light and strong and which makes a beautiful machine finish.

The D. C. Interlock Motors which run on three B batteries are built for Tanar by a large motor concern in the East which specializes in fractional horsepower motors. These motors were selected after an exhaustive search on several makes, and it was found that with a standard motor converted to an interlock D. C. system, the armature had a tendency to burn out when one motor had a heavier load than the other. In the new type motor, provision is made for over load with a proper compensator between the interlock connection and all danger of burning out the armature is eliminated.

The recorder mounts the tachometer, speed control footage recorder and is a complete unit in itself. All moving parts run in an oil bath and power is transmitted by worm and wheel, both of these parts being capped and ground to a perfect fit.

Tanar announces immediate delivery on these units and they carry the same guarantee as the Single System.

World's Largest Studio Planned in Great Britain

ERECTION of a studio, intended to be the largest in the world, on a 145 acre site at West Weybridge, is reported planned by a powerful British financial group headed by Lord St. John of Bletsoe. In connection with this gigantic project, for which a sum of $5,000,000 is said to be available, a hotel, theatre and a factory for the manufacture of phonograph records will be built. Negotiations are understood to be under way between the backers of the proposed studio and film interests in France and Germany for making the studio a center of multi-lingual production.

First Australian All-Talker

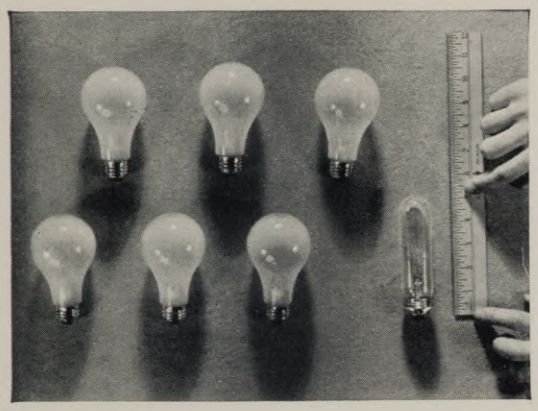
SYDNEY—After more than six months' in production, Norman Dawn's "Talkie Mad," first Australian all-dialogue picture has been finished.

●

1,940 Wired in Germany

BERLIN—Latest figures show that there are now 1,940 houses wired for sound in Germany. Of these theatres 752 are equipped with Tobis-Klangfilm, 309 Kinoton, 347 with home-made devices, and 532 for which the systems were not ascertained.

Bell & Howell Announce New Lamp for 16 MM. Projection



THE FIRST 75 volt 375 watt lamp ever perfected for 16 mm. movie projection has just been announced by Bell & Howell. Said to achieve a light intensity more than 40 per cent greater than was previously available for this type of projection, it depends primarily for its unusual results on a tremendous light concentration interestingly exemplified by the accompanying illustration.

In the picture one of these powerful little lamps is placed alongside of six 60 watt electric light bulbs such as are used in the home. When one considers that this new type projector lamp is actually only about one-third as large as one of the 60 watt bulbs and yet furnishes more illumination than all six of the latter combined, he can appreciate something of what has been accomplished.

Repeated scientific tests, made under widely varying conditions, are said to justify the statement that Filmo projectors, when equipped with this new lamp, can easily project black and white pictures 12 feet wide with entirely satisfactory distinctness and can attain excellent Kodacolor projection on a larger than ordinary screen.

The problem presented to the illumination engineers in developing this new lamp was to concentrate the maximum permissible amount of light upon the small 16 mm. film. Not only was it desirable to increase the amount of illumination so as to permit showing a large picture of sufficient brightness, but the light must be concentrated in as small a source as possible to focus properly with the optical train of lenses employed in projection, all of which has been successfully accomplished.

It is stated that naturally the new lamp, because of the great concentration of light, generates a fair amount of heat, but a projector equipped with an efficient fan cooling system satisfactorily takes care of this situation.

This new 375 watt lamp has opened up a tremendous field for the 16 mm. film. The perfectly safe little 16 mm. projector can now go into the auditorium and assembly hall and show pictures of entirely adequate size, clearness, and brilliance. This great step forward will be especially welcomed in the church and educational fields. Home movie projectionists will also appreciate the possibility of securing theatrical brilliance on a larger screen. The notable improvement made possible in Kodacolor projection is not the least of the triumphs scored by this new lamp.

●

Movietone in British Federation

LONDON—British Movietone News, Ltd., has been elected member of the Federation of British Industries, and is the first newsreel firm to be so honored by this organization.

Novel Lightning Researches by Amateur Photographers

A STUDY of French lightning is being made by amateur photographers organized by the Astronomical Society of France. Already many photographs of lightning flashes have been sent in and studied by the Society's experts. It has been found that these flashes seldom if ever are single, but that there are always a number of back and forth surges of electricity between the earth and the clouds, almost like an electric arc following the path of the first spark where this spark has broken down billions of atoms of the air gases and to make the path more highly conductive for electricity.

This is a conclusion already considered probable by American observers using high-speed motion picture cameras. Another and less well-known conclusion of the French study is that the path of a lightning flash may continue to glow for an appreciable time after the electric flashes have ceased entirely, this glow presumably being caused by the re-combinations of the atoms of air gases decomposed by electricity.

One of the chief needs of further lightning study, it is stated by Dr. Emile Touchet, vice-president of the society, is for additional photographs of lightning flashes by cameras with plates moving at high speed, so that the direction of the flash and the nature of its motion through the air can be determined. Another need is for stereoscopic photographs of the same lightning flash from two or more different points at measured distances apart on the ground, so that the heights and distances of the two ends of the flash can be computed. Members of the society are now being asked to attempt these additional tests.

●

Dyer Production Manager

EDWIN L. DYER, A.S.C., has been made Production Manager of the Southern Division of the Motion Picture Advertising Service Company, Inc., with his headquarters at New Orleans, La. He writes that natural color photography will play an important part in these films within a short time.

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Dupont Announces New Film

DUPONT has announced a faster panchromatic negative. Its sensitivity to all wave lengths of light has been greatly increased, according to DuPont officials, but the color balance, grain size and latitude are said to remain the same as in the former product.

"There is nothing for the cameraman to familiarize himself with except the adaptation of his lighting to a lower level," states the announcement. "This level varies in actual practice with the desires and artistry of the individual cameraman. From numerous tests which have been completed, excellent results have been obtained with reductions in amperage ranging from 40 to 65 per cent. This means a considerable saving in electric current, but perhaps the greatest advantage will be for the actors, as the glare and heat under which they have had to work can be greatly reduced.

"Manufacturers of panchromatic negative have generally recommended the handling of their product in total darkness or in a very feeble Wratten Series III safelight. Experienced operators will find that such a safelight may still be used with the faster negative, but of course greater precautions are necessary, such as substituting lower wattage lamps in the safelights and reducing the time the film is kept under the safelight. It is recommended that the operator determine under working conditions just how long the negative may be kept under the safelight at each working point without fogging. This can readily be done by exposing small pieces of the negative for different periods of time at the closest point to the safelight at which it is customary to work.

"No changes have been found necessary in desensitizing baths. Those laboratories which practice desensitization before development may continue their usual practices with the faster film without harmful effects upon the photographic quality. Filter factors for the faster film remain approximately the same. DuPont will continue the manufacture of the former negative, so both the high speed product and the regular product are available."

●

Camera Silencing Plans

AS A FIRST step in the renewed investigation of the problem of silencing the camera, the Producers-Technicians Committee of the Academy of Motion Picture Arts and Sciences is conducting a survey of the experiences and opinions of all first cameramen in Hollywood studios with regard to camera covers (blimps, bags, etc.). In this survey the Committee is receiving the cooperation of officials of Local No. 659 (International Photographers of the Motion Picture Industries), of the I. A. T. S. E. and M. P. M. O. Leaders of the American Society of Cinematographers have also expressed approval of the survey.

The questions call particular attention to the effects of new developments in noiseless recording and directional microphone devices.

This survey is intended to keep the Producers-Technicians Committee abreast of current developments and needs in camera silencing. In 1930 this Subcommittee conducted a thorough survey of the problem followed by scientific noise tests of all varieties of camera covers and of the cameras themselves. It was found that the silencing efficiency of the device varied over a wide range, and that the range in noise from the uncovered camera was a very considerable factor in the problem. The published report of the subcommittee established standards for desired camera silence, listed fundamental requirements and recommended materials for camera covers. It is planned to bring this report up to date after the present investigation.

The Camera Silencing Subcommittee consists of Kenneth F. Morgan, Frederick M. Sammis, and Lester Cowan, Manager of the Academy Technical Bureau.

24″ Integral Inkie



Integral Inkie Tests

ACCORDING to Elmer Richardson, of Mole-Richardson, Incorporated, interesting tests were recently made with their new product, the Integral Inkie. In one instance they selected a 24-inch integral sun spot, switched the current on and off twenty-five thousand times without interruption. This it is stated, is equivalent to five years of severe service.

According to Mr. Richardson, every Mole-Richardson product is exhaustively tested to bring forth possible hidden flaws before being placed on the market.

Concerning the new eighteen to twenty-four inch Integral Inkie sun spots, Mr. Richardson states that lamps of this type are particularly adapted to back and top lighting or where modeling is employed, for close-up photography. They are also used for front lighting where sets are deep or extremely large. Where special intense light is required, or it is necessary to effect lighting through windows and doors, the new Integral Inkies are adaptable. Further use is for sky illumination or bally-hoo lighting for night advertising purposes.

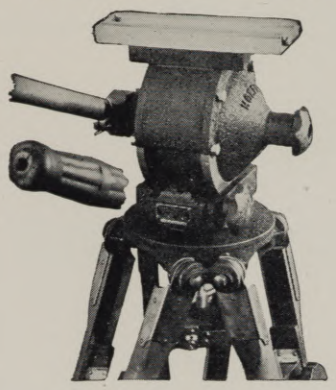
Special features of this new Integral Inkie, according to Mole-Richardson technicians, are its Integral construction which does not permit cracking or popping noises when the lamps are turned on and off; its lightness in weight which is due to the fact that the head is cast from silicon aluminum alloys; the simplicity of its design and its exceptionally low up-keep. Also it is stated that the new Integral Inkie affords more light or ejects more light due to a special mirror.

Integral Inkies are now being manufactured in eighteen and twenty-four inch sizes. However, it is stated that the new lamp will be manufactured in all regular sizes.

●

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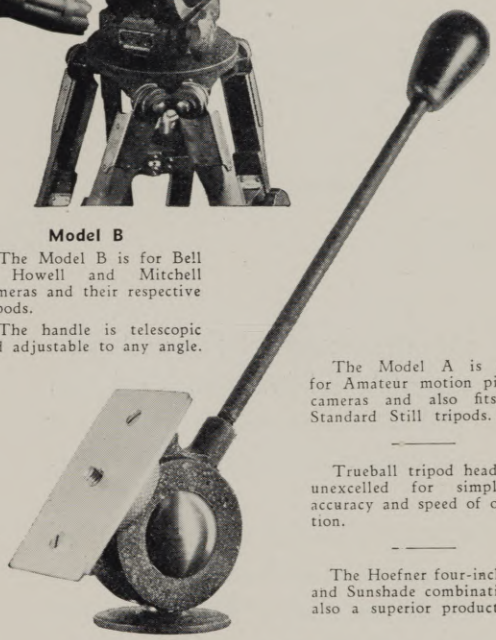


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attention

The pictorial section of the next volume of the Cinematographic Annual is being compiled. Anyone wishing to contribute prints for this section may send them in now for consideration.

Excellent Warning

AT A RECENT meeting of the Executive Committee of the Academy of Motion Picture Arts & Sciences it was decided that some effort should be made to stop the influx of young men and women who come to Hollywood for the purpose of entering motion pictures. A false impression has been spread over the country that golden opportunities lie within the grasp of any fairly talented or reasonably good looking young person who can manage to get to this city.

"The fact is," say Academy officials, "that there is a crying need for a reduction in the number of actors and actresses already here; players of training and ability who are literally in dire want and for whom there is no work.

"Of the seventeen thousand five hundred (17,500) extras registered at the Central Casting Bureau during 1930, only eight hundred thirty-three (833) averaged one day's work per week and only ninety-five (95) worked as much as three days per week. Of the seven thousand (7,000) actors and actresses registered in the Call Bureau only six or seven were placed each day. If work could be equally distributed this would mean each actor of the Call Bureau could be furnished one part every three years.

"When the industry is so hard put to it to care for its own tried and experienced players it is sheer suicide for youngsters to try to break in. It would help the situation if the press of the country would aid in spreading a picture of true conditions in the profession. Too much emphasis has been placed on the fortunate few who are in great demand and too little on the many thousands of experienced players who cannot make both ends meet.

"Less than a thousand actors are doing most of the work. A youngster, to get a chance, must pass the other six thousand (6,000) professional and registered actors, and in addition must compete with the thousands of young men and young women all over America and even in foreign countries who have the ambition for a motion picture career. The lucky break happens frequently in fiction; almost never in the Studio. To the average casting director it looks as if the audience all wanted to be actors and the actors were forced to be audience. Something must be done to impress the young people of the country with the fact that we do not need them in Hollywood. The oversupply of applicants for positions in the motion picture profession exists in all departments of production and the situation is relatively acute."

●

Victor Issues Supplement

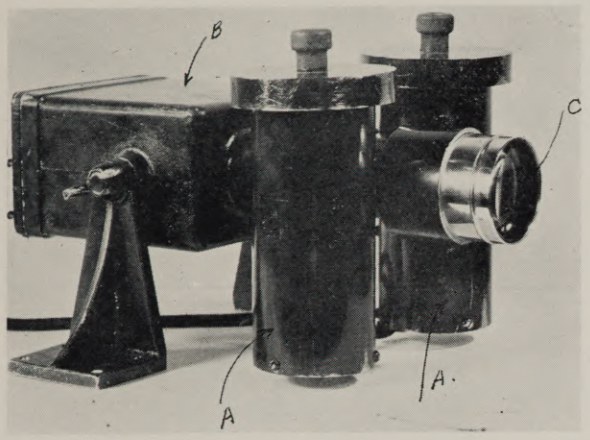
DUE to the unprecedented rapidity of development of the non-theatrical "Talkie" market during recent weeks, the Victor Animatograph Company has found it necessary to print a supplement to their very excellent Directory of Film Sources which they issued a short time ago. This supplement contains all the names of sources of 16 mm. films with sound-on-disc that the company has been able to compile to date. It also lists the titles of a great many of the available films, and should prove of worth to anyone interested in non-theatrical talkies. The supplement will be sent on request, free, to anyone writing the Victor Animatograph Corporation, Davenport, Iowa.

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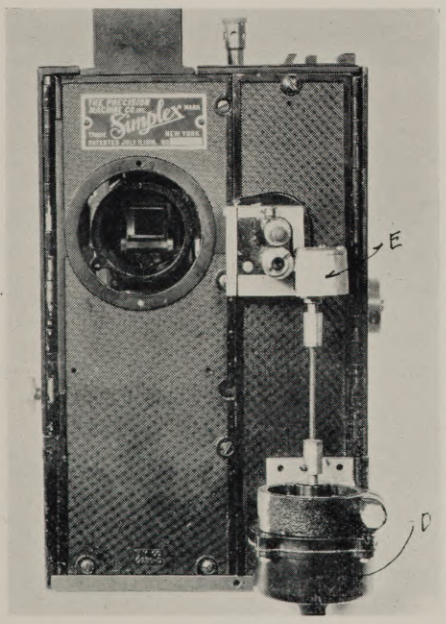
Radio Studios Buy Lamps

ONE of the largest orders for lamps reported in Hollywood for some time has just been filled by the Lakin Corporation for Radio Pictures Studios. A total of 107 24-inch Laco Lites was the order. Delivery was made last month. This is in line with the general signs of increased activity seen at the Radio Studios.

Useful Device



M. W. PALMER of the Paramount Studio, Long Island, N. Y., has developed a unique device for projecting footage numbers. It is shown in the two pictures accompanying this brief description. The device, according to Mr. Palmer, can be used in various ways in connection with sound pictures, as for instance: the introduction of sound effects in scenes already taken, the footage numbers appearing on the screen give an advance warning of the approach and finish of the scene in question, so that the sound can be synchronized exactly. Another application is the translation of the film from one language to another, and it can also be used in connection with title music.



Box "B" contains an electrical operated Veeder counter. The face of this counter is illuminated by two 10 Watt lamps contained in the lamp houses "A." The image of the counter numbers is thrown on a small screen below the main screen by the lens "C." A contactor "D" attached to the projector is driven by a worm gear "E." This contactor makes one contact for every 16 frames, thereby moving the counter ahead one unit.

The only alteration necessary to the projector is to bore four holes to attach the base of the contactor. A push button is provided in the operating room, so that the counter can be reset to zero at any time.



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The German Selection

OF INTEREST to Americans is the poll of the ten best pictures of the year, just completed and announced by Der Deutsche, Berlin daily. The poll of this paper differs considerably from that of Film Daily's poll, in that while it was a German paper that handled it, American films were selected. The poll of Film Daily showed not a foreign picture, although there were some excellent ones. The two groups follow:

Der Deutsche

1. Under den Dachern von Paris.
2. All Quiet on the Western Front.
3. The Blue Angel.
4. Westfront 1918.
5. Anna Christie.
6. Two Hearts in Waltz Time.
7. With Byrd at the South Pole.
8. Brand in der Oper.
9. The Big House.
10. Mickey Mouse.

Film Daily

1. All Quiet on the Western Front.
2. Abraham Lincoln.
3. Holiday.
4. Journey's End.
5. Anna Christie.
6. The Big House.
7. With Byrd at the South Pole.
8. The Divorcee.
9. Hell's Angels.
10. Old English.

7 Soviet Features Set On New Season Schedule

SEVEN features are reported definitely set on the Soviet schedule for 1931, with "Life is Beautiful," a Meschrabpom production already completed. Others on the program include the Sovkino vehicles, "The Road Through Life," "The Iron Transport," and "Towns and Years." "Igdenbu, the Great Hunter," a Siberian mountain story, "Don Diego," and "The Five Pioneers," said to be a second "Turksib" but showing the construction of a huge canal instead of a railway, round out the lineup to date.

Pudovkin, director of "Life is Beautiful," is now in Berlin arranging for the German premiere of the film to occur this month.

3 New Color Processes Introduced in Europe

THREE new processes for color photography have been introduced in Europe within recent weeks, it is reported in dispatches to the M. P. Division of the Department of Commerce. In Paris the Societe Continentale Europeenne Cinecolor has been formed with a capital of 3,500,000 francs to exploit the Thornton process, the patent of which is held by John Edward Thornton, of Jersey, England. Louis Aubert is on the company's board of directors. Another French company, Societe Cinechrome, with a capital of 55,000 francs, will exploit a color invention produced by Raphael Weill and Eugene Rivoche. In Germany the Arena Co., capitalized at 300,000 marks, is to manufacture a color film under a new and inexpensive system known as spectrocolor.

FOREIGN NOTES

$5,000,000 British Firm May Operate at Elstree

LONDON—Celloda Syndicate, Ltd., it is reported, is planning the investment of approximately $5,000,000 in a laboratory venture at Elstree, for the manufacture of a newly patented non-inflammable film-stock to be marketed at a competitive price. The laboratory, construction of which alone will cost $1,500,000, will have a capacity of 4,000,000 feet of film per week. The company is also reported contemplating erection of modern studios, which will absorb part of the plant's film output.

Hungary

ON THE occasion of the ten year jubilee of the Hungarian censorship the latter has published a collection of its decisions concerning film prohibitions during this period. It appears from this statistic that during the period in question 15,357 films were censored in Hungary, of which 731, or about 5 per cent of the total submitted, were banned. It must be remembered, however, that about 2/3 of the films submitted to censorship were newsreels, farces, educationals, publicity films, etc., while only 1/3 were feature films. Yet, the 731 pictures banned were almost exclusively features. The percentage of banned films, therefore, amounts to about 15 or 20 per cent of the total submitted.

Argentine Tariff Asked

A DELEGATION representing Argentine film producing interests recently petitioned President Uriburu for tariff or other protection for the national film industry. Argentina produced last year five moving pictures. Releases from all sources amounted to 800, most of which came from the United States, Germany, France, Spain, Italy and England contributed some films.

Third Dimension

A FURTHER claim to have solved the problem of stereoscopy has now been made by Continsouza, the French projector manufacturer, now part of the Gaumont concern. Nevertheless, in its present stage the invention is only effective with one spectator. A film made on this new principle was shown in natural colors and projected through a new type of apparatus. Continsouza claims that it will be able to put the perfect three dimensional projector on the market in the near future.

Berlin

A NEW Chamber (No. 4) was instituted at the Berlin Court, beginning January 1, 1931, the competence of which involves litigations among artistic and musical employees (in theatre and film), film operators, cameramen, sound-operators, etc. The Chamber will also control the execution of the decisions of the special vaudeville and stage arbitration court, and receive appeals against these d icisions. In view of the great number of cases submitted, the "Stage and Film Chamber" will have two presidents and meet five times a week. These presidents will be Messrs. Franke and Hildebrandt, who for years have been specializing on film questions.

France

The French Exhibitors' Syndicate is organizing a month's visit to study cinema exploitation in the United States. The party headed by the president, Leon Brazillon, will leave Paris on March 15, next, and will visit New York, Philadelphia, Chicago, Boston, Dayton, Detroit, Buffalo, Washington, San Francisco, and Hollywood. A trip to Niagara will be included.

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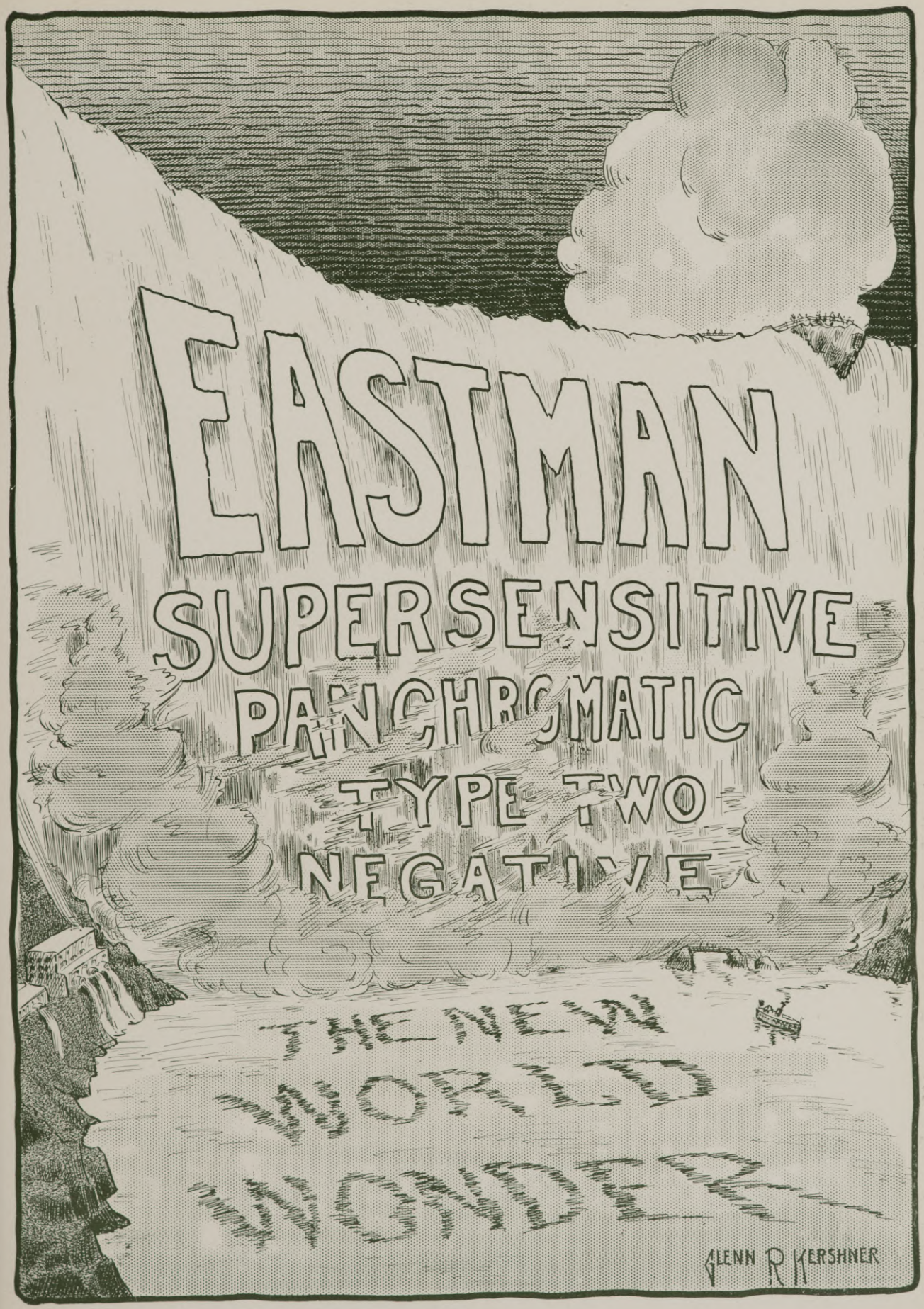
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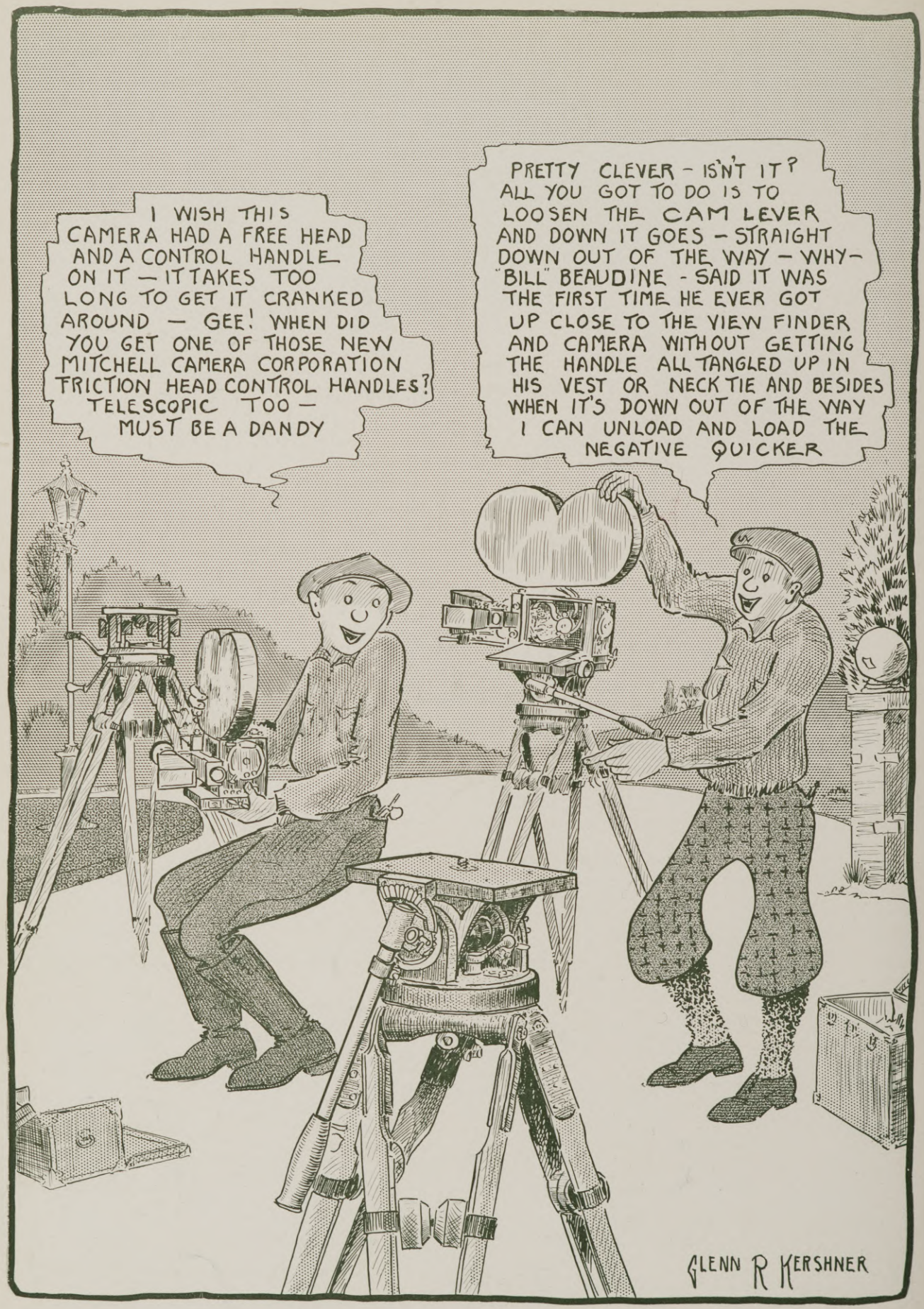
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